Telegraph Creek Preserve

Land Stewardship Plan 2011

CONSERVATION 20/20
LEE COUNTY

RGO

Discover
LEE COUNTY
Parks & Recreation

Telegraph Creek Preserve

Land Stewardship Plan

16451 N River Road
Alva, FL 33920

First Edition

Prepared by the Land Stewardship Section
Lee County Department of Parks and Recreation

Approved by the Lee County Board of County Commissioners: 4-19-2011

Acknowledgements

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List of Exhibits

List of Acronyms

APC	Alva Planning Community
ATV	All Terrain Vehicle
BJP	Bob Janes Preserve
BMP	Best Management Practice
BOCC	Lee County Board of County Commissioners
BRP	Babcock Ranch Preserve
C20/20	Conservation 20/20
CLASAC	Conservation Lands Acquisition and Stewardship Advisory Committee
CREW	Corkscrew Regional Ecosystem Watershed Trust
CRP	Caloosahatchee Regional Park
DHR	Division of Historical Resources
FCT	Florida Community Trust
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
FDNR	Florida Department of Natural Resources
FDOF	Florida Division of Forestry
FLEPPC	Florida Exotic Pest Plant Council
FLU	Future Land Use
FLUCFCS	Florida Land Use Cover and Forms Classification System
FNAI	Florida Natural Areas Inventory
FWC	Florida Fish and Wildlife Conservation Commission
IRC	Institute for Regional Conservation
LCDCD	Lee County Department of Community Development
LCDNR	Lee County Division of Natural Resources
LCDP	Lee County Division of Planning
LCPR	Lee County Department of Parks and Recreation
LCU	Lee County Utilities
LSOM	Land Stewardship Operations Manual
LSP	Land Stewardship Plan
MARS	Maintenance and Repare Service
MU	Management Unit
NOCP	North Olga Community Plan
NWI	National Wetlands Inventory
SFWMD	South Florida Water Management District
STRAP	Section-Township-Range-Area-Block.Lot (Parcel)
TCP	Telegraph Creek Preserve
USACOE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

Vision Statement

It is
the vision
of the land stewards
in the Lee County Department
of Parks and Recreation and the
Conservation 20/20 Program to restore
Telegraph Creek Preserve to a productive,
functional and viable ecosystem. Restoration
of disturbed habitat on the property will further
improve habitat for many rare native plant and
animal species including endangered and
threatened species such as gopher tortoises and
scrub jays. The Preserve will also protect water
quality reaching the Caloosahatchee Estuary via
Telegraph Creek and the Caloosahatchee River and
provide valuable scenic and ecological educational
opportunities
for visitors.

I. EXECUTIVE SUMMARY

Telegraph Creek Preserve (TCP) is located in northeastern Lee County, within Sections 9, 10, 11, and 14, Township 43, Range 26. The Preserve includes two nominations; 236-2 and 412 which were both acquired on January 30th, 2009 through the Conservation 20/20 program for $23.9 million. The Conservation 20/20 program was established in 1996 after Lee County voters approved a referendum that increased property taxes by up to 0.5 mil for the purpose of purchasing and protecting environmentally sensitive lands.

This Conservation 20/20 Preserve totals approximately 1,727 acres. The Preserve's northern and western boundaries are the Babcock Ranch (future Community); its southern boundary is SR 78 and private property; and its eastern boundary is the Bob Janes Preserve, a Conservation 20/20 property. Portions of TCP have historically been used for agriculture (crops and cattle), outdoor recreation (camping, hunting and off-road activities), and alterations were made for a proposed development.

The Gulf of Mexico and Caribbean Sea affect the climate of Lee County and these elements influence TCP by creating mild, sub-tropical conditions. Average annual rainfall is 48.25 inches; substantially lower than the average rainfall for the entire county during the same period (64.4 inches). The majority of the rain falls between June and September. Natural trends and disturbances influencing plant communities and stewardship at TCP include hurricanes, flooding, wildfires, occasional freezes and the cycling of wet and dry seasons.

The northern half of TCP lies within the Southern Gulf Coastal Lowlands physiographic region; however the southern half, including Site 412, extends into the Caloosahatchee Valley. "The Gulf Coastal Lowlands are separated from the DeSoto Plain by marine terraces that developed on the south side of the Peace River Valley. The transition from upland to shoreline occurs as a broad, gently southwestward sloping plain composed of depositional sediments of marine origin." The Caloosahatchee Valley is an ancient river valley filled with sands and shells from the Plio-Pleistocene age and is comprised of flatwoods and wet prairie with terraced landforms. It rises less than 15 feet in elevation (SWFRPC 2005).

Lee County is located within the Gulf Coastal Lowlands of Florida that extend around the coastal periphery of the state where elevations are generally less than 100 feet. The elevations range from 18.5 feet at the north end and slope in a general southerly direction to 0.2 feet at the south end of the Preserve along Telegraph Creek.

There are twenty different soil types found at the Preserve. The soils within the Preserve have all been identified as having severe limitations; either ponding,

wetness, or too sandy. Covering almost one-third (32 percent) of the Preserve, Oldsmar Sand is the most common soil type. Malabar Fine Sand and Immokalee Sand are tied for the second most common soil type covering 10 percent each, while the remaining seventeen soil types cover less than one-half of the lands.

TCP is within the Okeechobee Basin of the South Florida Water Management District's Lower West Coast Region. The Preserve lies in three different watersheds: Telegraph Swamp, Tidal Caloosahatchee and West Caloosahatchee. Hydrological alterations have been made on and directly adjacent to TCP that affect the natural sheet flow across the lands. The existing ditches, berms, swales, power line easements, internal roads, cattle wells and borrow ponds all influence the water flow on the site by either interrupting sheet flow or holding water for extended periods in some areas, while excessively draining other areas.

TCP contains a combination of wetland and upland communities that serve as important habitat for a variety of birds, mammals, reptiles and amphibians. The Preserve consists of thirty-seven distinguishable plant communities described by the Florida Natural Areas Inventory. While dry prairie (palmetto prairie), mesic flatwoods and pastures are the most common natural plant communities; approximately 45% of the plant communities are designated as "disturbed."

The Preserve has a long history of wide-ranging uses with lasting environmental impacts. Intense logging of slash pine from the late nineteenth century until the 1930s virtually eliminated all old growth stands of the southern mixed forest in south Florida. Agricultural activities had begun prior to the first available aerial photographs in 1944. A man-made tributary to Telegraph Creek appeared for the first time in the 1958 aerials as the property owners began to prepare the land for a proposed residential development that never came to fruition. In 1980, the Baker residence appeared on aerial photography of the southwestern portion of the Preserve.

Cattle have been a part of TCP, formerly the Argo Ranch, since at least the 1970s. Cattleman, Fred Lewis, has held an active cattle lease for about 20 years with both the previous owners, the Bakers, and currently with Lee County.

In addition to restoring and protecting the resources for wildlife and native plant communities, appropriate resource based public amenities will be created that will provide enjoyable opportunities for the public while protecting the Preserve's biologic integrity. A trailhead and trail system will be created to allow hikers and equestrian users onto all but the western sections of the Preserve, which is the most disturbed portion of the preserve and most intensively used by cattle. This will be a primitive trail designed to protect the Preserve's natural resources, while allowing appropriate public access to TCP and connecting into the Bob Janes Preserve property trail system.

The goal of this land stewardship plan is to identify Preserve resources, develop strategies to protect the resources and implement restoration activities to restore TCP to a productive, functional and viable ecosystem while ensuring that the Preserve will be managed in accordance with Lee County Parks and Recreation's Land Stewardship Operations Manual.

Restoration and management activities at TCP will focus on maintaining fire dependant ecosystems with prescribed fire, controlling invasive exotic plant and animal species, removing debris, and enhancing wildlife habitat. A Management Action Plan outlines restoration and stewardship goals. This plan outlines these goals and strategies, explains how the goals will be accomplished, and provides a timetable for completion. This land stewardship plan will be revised in ten years (2021).

II. INTRODUCTION

Telegraph Creek Preserve (TCP) was acquired as two parcels in January 2009. Both parcels were acquired through the Conservation 20/20 (C20/20) Program for a total cost of $23.9 million. The Preserve totals 1,727 acres currently making it the fourth largest C20/20 property. It is located in northeastern Lee County, east of S.R. 31, north of County Road 78, south of Babcock Ranch Preserve (BRP), and west of Bob Janes Preserve (BJP). Telegraph Creek bisects the southeastern region of the Preserve.

The major native and altered plant communities on the Preserve include dry prairie, mesic flatwoods, pasture, and scrubby flatwoods. Much of the Preserve consists of plant communities that are disturbed in varying degrees; some causes for this disturbance were several decades of agricultural (crops and cattle grazing) usage on portions of the property, outdoor recreation (camping, hunting and off-road activities), an abandoned development, surrounding roadway infrastructure, and lack of fire regime. The results of these disturbances, as well as others, have interrupted hydrological flow-way patterns and hydroperiods and allowed the introduction of invasive exotic plants in some areas. The surrounding land is mostly agriculture, single family residences and other conservation lands.

TCP contains a combination of wetland and upland communities that serve as important habitat for a variety of birds, mammals, reptiles and amphibians. Several listed species have utilized the Preserve, including state and federal endangered and threatened species, wood stork (*Mycteria americana*), Florida panther (*Puma concolor coryi)* and Florida scrub jay (*Aphelocoma coerulescens*); although panthers and scrub jays have not been observed in several years. The quantity and diversity of wildlife species will hopefully increase as restoration activities continue. Invasive exotic plant removal work will significantly support three restoration goals: habitat improvement, hydrological restoration, and fire

management. The wildlife and overall ecosystem will benefit from enhanced, viable and functioning plant communities through invasive exotic plant removal/control, improved wetland hydroperiods, and restoration of an essential fire interval with prescribed fire management.

Stewardship challenges for the Preserve include invasive exotic plant and animal control, prescribed fire in fire dependant plant communities, enhancing hydrologic functions and wildlife habitat, and boundary protection. Exotics are present throughout the site in both disturbed and non-disturbed areas. Once the logistics for creating appropriate public access are resolved, planned recreational opportunities will include two primitive trail systems that will support both seasonal hikers and equestrian users. Eventually, the East Trailhead will provide hikers access to the BJP's hiking trails.

The purpose of this stewardship plan is to define conservation goals for TCP that will address the above concerns. It will serve as a guide for Lee County's Department of Parks and Recreation (LCPR) to use best management practices to ensure proper stewardship and protection of the Preserve. It also serves as a reference guide because of the extensive field studies and research of scientific literature and historic records conducted by C20/20 Staff that help to explain the Preserves ecosystem functions, its natural history and its influences from human use.

III. LOCATION AND SITE DESCRIPTION

TCP, formerly known as the Argo Ranch or Baker Ranch, is located in northeastern Lee County within Sections 9, 10, 11 and 14, Township 43 South, Range 26 East. The Preserve includes two Parcels (236-2 and 412).

Parcel 236-2 consists of STRAP # 09-43-26-00-00002.0000, 10-43-26-00-00003.0000, 10-43-26-00-00002.0030, 10-43-26-00-00004.0000, 10-43-26-00-00001.0000, 11-43-26-00-00001.0020, and 11-43-26-00-00001.0000. Parcel 412 consists of STRAP # 11-43-26-00-00001.0050 and 14-43-26-00-00002.1000.

Parcel 236-2 is accessed via a paved driveway entrance off of North River Road which shows as Argo Drive on some road maps. Parcel 412 is accessed via a grassy pull-off from North River Road.

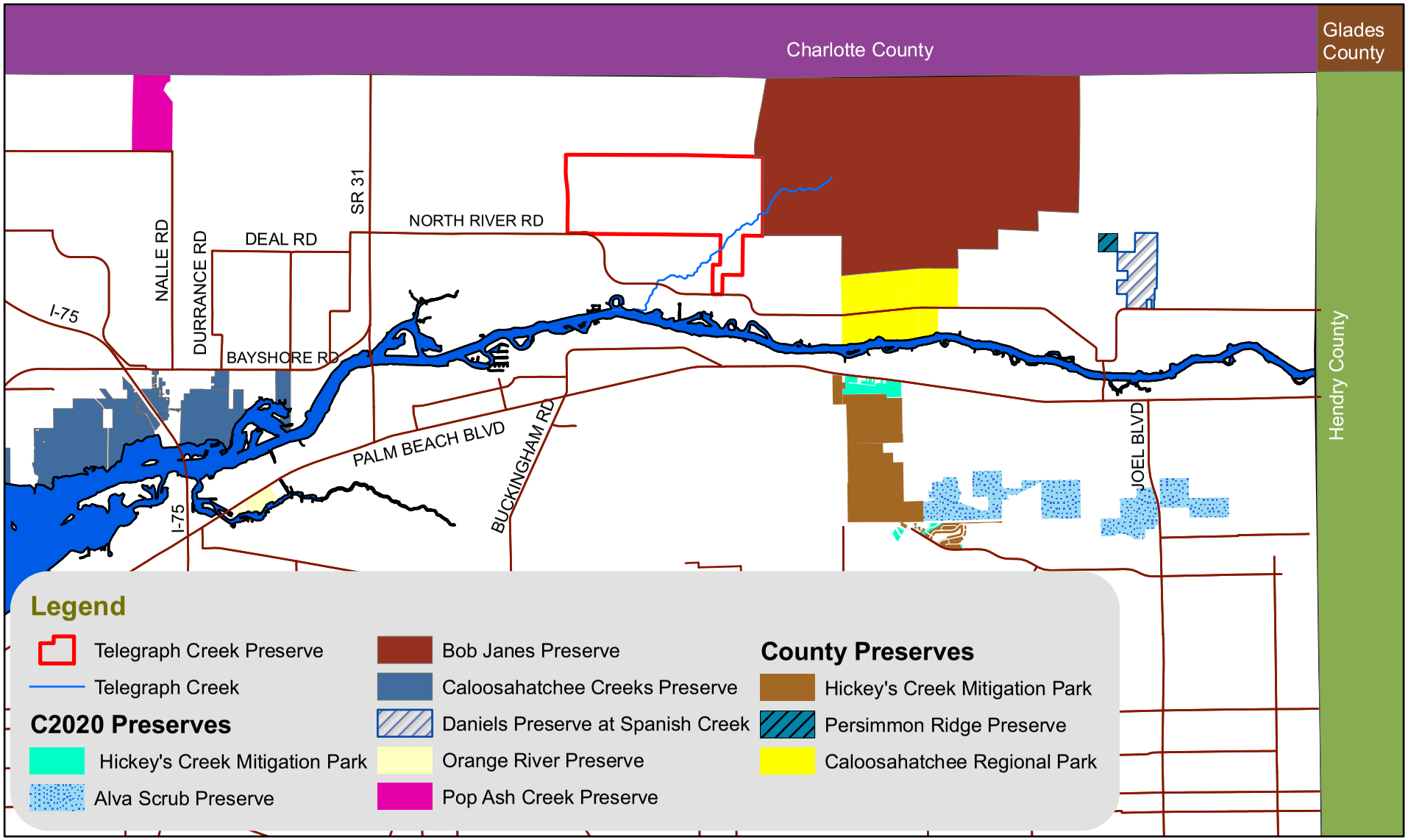
The address assigned to Parcel 412 by the Lee County Property Appraiser's office is 16451 North River Road, Alva, Florida, 33920. Lee County Division of Public Safety (E-911 Program) will not assign an address to a parcel unless a structure will be placed on site, so any future entrances and trailheads will not receive separate address designations.

TCP lies north of North River Road and is bordered to the north and west by Babcock Ranch and to the east by BJP. Parcel 412 is a narrow north south jut of land, referred to as the "arm" of TCP, bordered by Telegraph Creek Estates to the west and single family homes and BJP to the east. The Preserve is located approximately 7 miles west of the Lee-Hendry County line and 2.5 miles east of State Road 31 (Figure 1).

The Preserve is approximately 1,730 acres in size and has historically been used for cattle ranching and hunting and once contained a residence and guest cabin for outdoor recreation for the Baker family. The surrounding land is mostly agriculture, single family residences and other conservation lands; however development of the Babcock Ranch Community is proposed north and west of TCP.

The Preserve consists of thirty-seven plant communities, a mosaic of both human-altered and natural plant communities; dominant areas are dry prairie, mesic flatwoods and pasture. Approximately 45% of the plant communities are designated as "disturbed," typically due to alterations in the fire regime, invasive exotic plant infestations and/or changes in the natural drainage patterns. Figure 2 identifies the boundaries of TCP in a 2010 aerial photograph.

Figure 1: Location Map



Telegraph Creek Preserve

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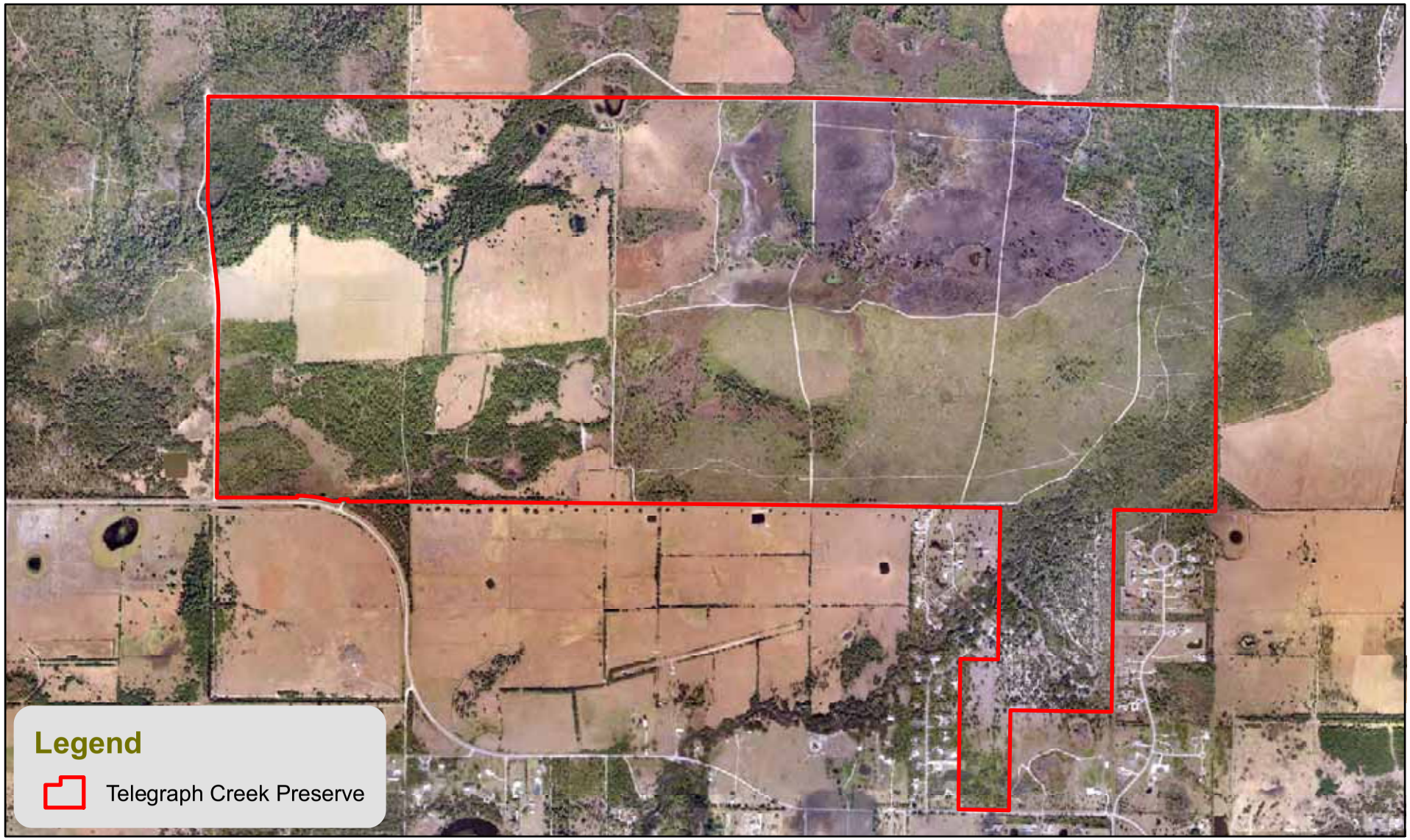
Map Prepared On: 7/29/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 2: 2010 Aerial



Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

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Map Prepared On: 7/29/10 by lgreeno@leegov.com

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IV. NATURAL RESOURCES DESCRIPTION

A. Physical Resources

i. Climate

Southwest Florida has a humid, sub-tropical climate due to its maritime influence from the Caribbean Sea and the Gulf of Mexico. The Bermuda high-pressure cell prevents convective clouds from building into thunderstorms in the fall and winter and as the Bermuda High weakens in late spring, thunderstorms occur regularly. Superimposed on the pattern of daily showers and thunderstorms is precipitation resulting from large-scale circulation systems such as tropical storms and hurricanes.

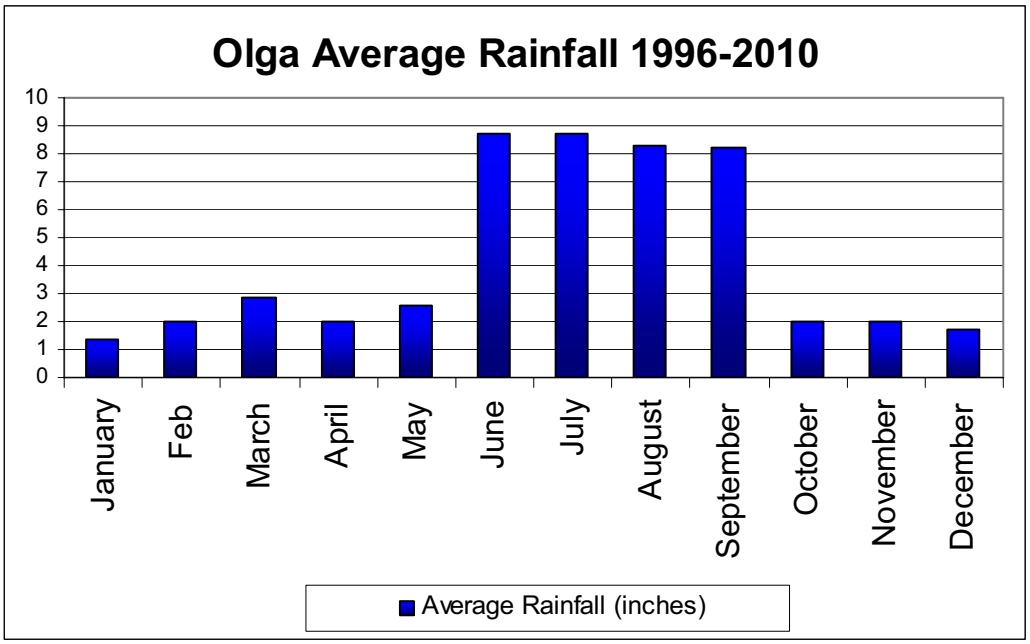
In late fall, winter, and early spring, weather systems (fronts) from the northeastern United States move south into Florida. These fronts can bring significant swings in temperature and humidity, causing the weather to oscillate between maritime tropical and continental winter weather.

Temperate climate influences are exerted as well, with infrequent but significant freezes occurring in December and January (FCC 2005). These freezes occasionally damage the vegetation and prevent some of the more cold sensitive tropical plants from becoming established. Cold fronts regularly push cool, sometimes moist weather from the southeastern U.S. to southwest Florida during the winter. These cold fronts also encourage migratory birds to utilize the Preserve as either a stop-off point on a longer voyage, or as a winter roosting and feeding area. Table 1 shows the average high and low temperatures for Fort Myers, Florida compiled by the Southeast Regional Climate Center.

Table 1: Average High/Low Temperatures for Ft. Myers, FL (1892-2009)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High temperature (°F)	74.4	75.8	79.7	84.0	88.1	89.9	90.5	90.8	89.2	85.1	79.5	75.4
Low temperature (°F)	53.8	54.7	58.5	62.3	67.3	72.1	73.7	74.1	73.4	68.2	60.4	55.3

The graph below depicts rainfall data collected by Lee County Division of Natural Resources (LCDNR) on a daily basis from the Olga Water Plant, located on Werner Drive, south of the Caloosahatchee River, approximately ¾ miles south of the arm. The average annual rainfall from 1996-2010 was 48.25 inches, much lower than the 60.74 average for all LCDNR's rain gauges.



ii. Geology

Southwest Florida can be divided into ten major physiographic provinces, as described in the Southwest Florida Ecological Characterization Atlas (1984). These are broad-scale subdivisions based on physical geography features such as terrain texture, rock type and geologic structure and history. The northern half of TCP lies within the Gulf Coastal Lowlands (Figure 3-Physiographic Region), while the southern portion extends into the Caloosahatchee Valley physiographic region (White 1970). "The Gulf Coastal Lowlands are separated from the DeSoto Plain by marine terraces that developed on the south side of the Peace River Valley. The transition from upland to shoreline occurs as a broad, gently southwestward sloping plain composed of depositional sediments of marine origin." The Caloosahatchee Valley is an ancient river valley filled with sands and shells from the Plio-Pleistocene age and is comprised of flatwoods and wet prairie with terraced landforms. It rises less than 15 feet in elevation (SWFRPC 2005).

Ten lithostratigraphic units have been identified in the state of Florida. Lithostratigraphic units are differentiated by the conditions under which they were formed and when during geologic time they were formed. These lithostratigraphic units are further divided by timing of formation into stratigraphic units. TCP lies on the boundary between two lithostratigraphic units, the Tamiami Formation and the Tertiary-Quaternary Sediments (Figure 3-Stratigraphy Units).

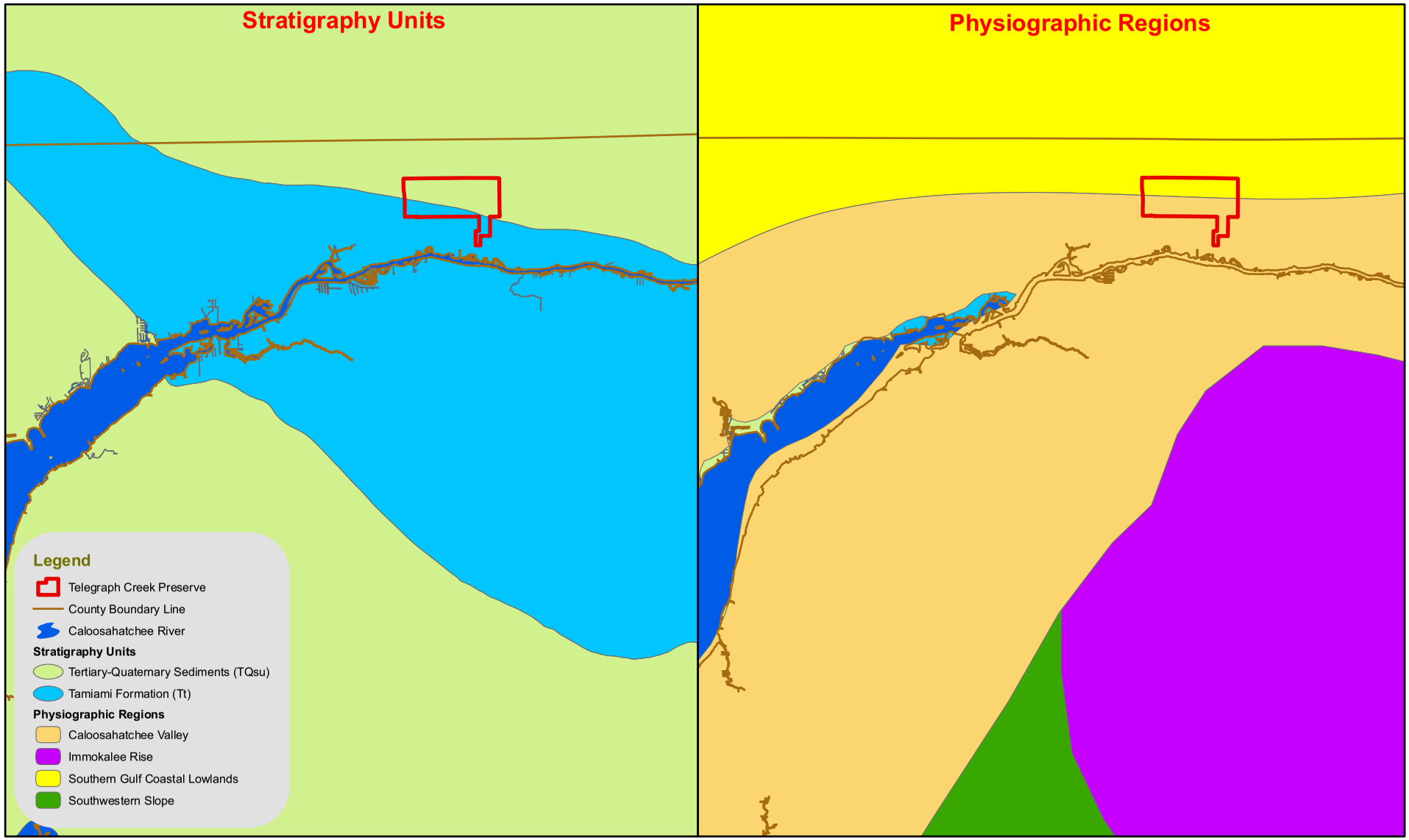
The southern third of the Preserve is located on the Tamiami Formation, which was created during the Pliocene Epoch between 5.3 and 1.8 million years ago. The Tamiami Formation contains a mix of fine to coarse-grained sand, sandy clay, fossiliferous sand and fossiliferous limestone. It has highly permeable to impermeable lithologies that form a complex aquifer. Phosphate is present throughout as are fossils, particularly barnacles, mollusks, corals, sea urchins, and smaller marine life.

However, throughout much of Lee County, including the northern area where TCP is located, the Caloosahatchee and Fort Thompson units are somewhat indistinct and have been lumped together as undifferentiated Tertiary/Quaternary shell-bearing units. This unit consists of a quartz sand blanket covering limestone and clay. Fossils, including mollusks and corals, are very common and usually in excellent condition (Missimer and Scott 2001).

The northern two-thirds of TCP was created during the Pleistocene Epoch between 1.8 million to 10,000 years ago. This period is also known as the Ice Age, where huge ice sheets formed across Canada and the northern United States. When these ice sheets were formed, they consumed large quantities of seawater, dropping the current sea level 300 or more feet, which greatly

increased the land area of what is now Florida. As the glaciers shrank, sea levels rose, and the Florida peninsula was again flooded. During the peak warm periods, sea level reached 150 feet above the current level. The waves and currents during these high sea level periods reworked the sediments and formed a series of geological units (Caloosahatchee, Ft. Thompson, Anastasia, Miami Limestone and Key Largo Limestone). Each of these geological units is characterized by their unique compositions. The Pleistocene Epoch had four separate freezing and melting periods (Rupert 1989).

Figure 3: Geologic Features



Telegraph Creek Preserve

0 3 6 12 Miles

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Map Prepared On: 06/11/10 by sfurnari@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

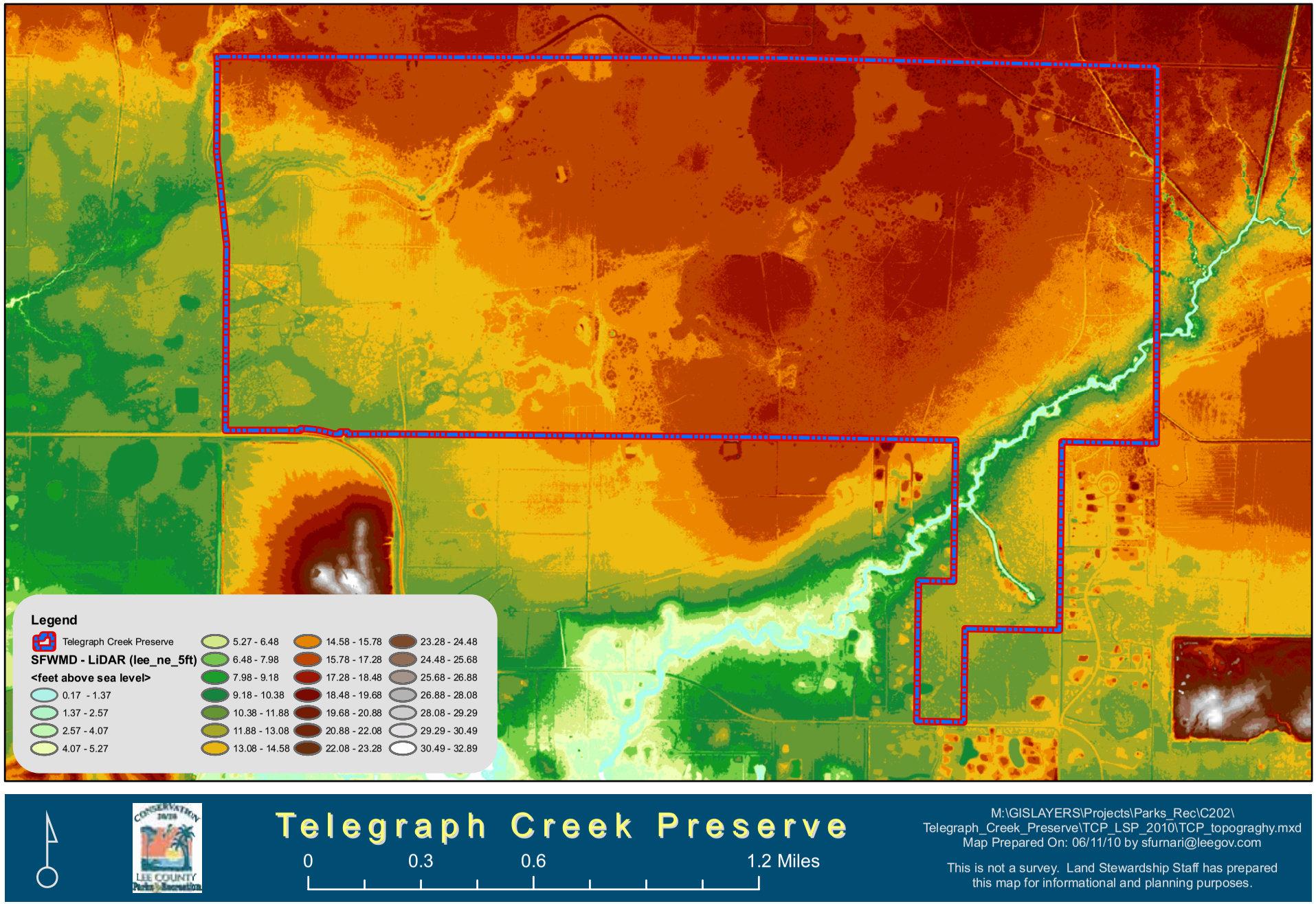
iii. Topography

Lee County is located within the Gulf Coastal Lowlands of Florida that extend around the coastal periphery of the state where elevations are generally below 100 feet (Stubbs 1940; Cooke 1945).

Natural elevations at TCP range from 18.5’ above sea level at the north end and slope in a general southerly direction to 0.2’ above sea level at the southern range of the Preserve along Telegraph Creek. Man-made topographic features at the Preserve are scattered throughout and include ditches, berms, cow wells, and trails associated with historic agricultural and hunting activities, an abandoned development project and storm water management efforts; and plow lines created by the Florida Division of Forestry. Piled spoil material from some of the cow wells reach elevations of 24’ above sea level. Exterior topographic features include sections of North River Road and adjacent unnamed access roads that act as elevated berms which traverse along southwest, western and northern perimeters of the Preserve.

The following topographic map (Figure 4) uses light detecting and ranging (LiDAR) data, which is an optical remote sensing technology that measures properties of scattered light to find range and/or other information of a distant target.

Figure 4: Topograghy Map



iv. Soils

The Soil Survey of Lee County, Florida (Henderson 1984) was designed for a diverse group of clients to be able to comprehend soil behavior, physical and chemical properties, land use limitations, potential impacts, and protection of the environment. The soils maps are based on vegetation and landscapes as interpreted from aerial photos, along with fieldwork. Major fieldwork conducted for the Lee County Soil Survey was completed in 1981. Accuracy of soil mapping is often around 70 to 80%, with a typical 3-acre mapping limit (WMI 2005).

Based on these classifications, twenty different soil types are found at TCP. Figure 5 shows the locations of these soils. A common relationship for many of these soil types is that because they are poorly drained they have limitations that affect their suitability for recreational development. The soils within the Preserve have all been identified as having severe limitations. Severe means "that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures." These limitations are one of several reasons why public use amenities will be limited. Slope ranges for the soils located within TCP vary from 0-2% with the exception of Daytona Sand and Orsino Fine Sand which both range from 0-5%. Slope is "the inclination of the land surface from the horizon." Essentially, it has been established that TCP is primarily level.

Table 2 summarizes the characteristics of the soils found. These characteristics have been organized in the table to quickly provide land stewards with pertinent soils information for understanding restrictions and/or results regarding future habitat restoration and probable recreational plan limitations and expenses. The descriptions below explain the soil characteristics found in the table.

Habitats (Range Sites):

Based on the Soil Survey of Lee County, there are eight generalized range site categories in the county and five are found on TCP. Man-made areas are not included in range site categories. These categories are not Florida Natural Areas Inventory (FNAI) designations and may not correspond with the vegetation that is currently present on site. The ranges identified on the Preserve are:

- South Florida Flatwoods - Nearly level areas with scattered to numerous pine trees (*Pinus elliottii* var*. densa*), saw palmetto (*Serenoa repens*), gallberry (*Ilex glabra*), and other woody plants.
- Slough - Open grassland where nearly level areas act as broad natural drainage courses in the flatwoods. Potential plant community is dominated by maidencane (*Panicum hemitomon*) and bluestems (*Andropogon spp.*).

- Freshwater marshes and ponds - Open grassland marshes or ponds (depressions) with the potential to produce significant amounts of various grasses, sedges, and rushes. Water fluctuates throughout the year. The areas at TCP where soil types are designated as marshes or ponds have a cover type of mixed cypress/pine. Standing water occurs during the wet season.
- Longleaf Pine-Turkey Oak Hills – Nearly level to rolling areas identified by stands of oak, saw palmetto, and south Florida slash pine.
- Sand Pine Scrub – Nearly level to gently sloping uplands supporting a dense stand of sand pine trees and a dense woody understory.

Wetland Classification:

Wetland classifications are used to identify locations that may retain water for an indeterminate amount of time.

- F - Flooding: The temporary inundation of an area caused by overflowing streams, runoff from adjacent slopes or tides.
- S-Slough (sheet flow): A broad nearly level, poorly defined drainage way that is subject to sheet-flow during the rainy season.
- P-Ponding: Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

Hydrologic Group:

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils are thoroughly wet and receive precipitation from long-duration storms. The hydrologic categories at TCP are:

- A – Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.
- B - Soils having a moderate infiltration rate (low to moderate runoff potential) when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well-drained soils that have moderately fine texture to moderately coarse texture. Moderate rate of water transmission.
- C - Soils having a slow infiltration rate (moderate to high runoff potential) when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. Slow rate of water transmission.

- D - Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist mainly of clays that have a high shrink-well potential, soils that have a permanent high water table, soils that a have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. Very slow rate of water transmission.

Note that some of the soil types are shown as having dual hydrologic groups, such as B/D. A B/D listing means that under natural conditions the soil belongs to D, but by artificial methods the water table can be lowered sufficiently so that the soil fits in B. The Preserve has received an extensive level of hydrological alterations including agricultural berms and ditches which has affected the soil hydrology and behavior.

Wildlife Habitat:

Soils affect the type, quality and quantity of food and cover for wildlife. Wildlife diversity and abundance are also influenced by distribution of food, cover, and water. Wildlife habitat may be created or improved by planting appropriate vegetation, maintaining existing plant communities and promoting the natural establishment of desired vegetation. The soils of Lee County occur in four different habitat types:

- Openland: Cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. Wildlife attracted includes northern bobwhite quail (*Colinus virginianus*), sandhill cranes (*Grus canadensis*), hawks, various birds, and rabbits.
- Woodland: Deciduous plants, coniferous plants, grasses, legumes, and wild herbaceous plants. Wildlife attracted includes wild turkeys (*Meleagris gallopavo*), thrushes, woodpeckers, squirrels, foxes, raccoons (*Procyon lotor)*, white-tailed deer (*Odocoileus virginianus*), snakes, frogs, and bobcats (*Lynx rufus*).
- Wetland: Open, marshy or swampy shallow water areas. Wildlife attracted includes ducks, ibis, egrets, herons, shorebirds, snakes, frogs, alligators (*Alligator mississippiensis*), and otters (*Lutra canadensis*).
- Rangeland: Shrubs and wild herbaceous plants. Wildlife attracted includes white-tailed deer, quail, Virginia opossums (*Didelphis virginiana*), and various birds.

The potential of the soil for wildlife habitat is rated as:

- Good - Easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected.
- Fair - Established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results.

- Poor - Limitations are severe as habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive.
- Very poor - Restrictions are very severe and unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.
- -- Soil was not rated.

Staff considers soil limitations that affect the Preserve's suitability for recreational development. Although the Soil Survey of Lee County has other categories under recreation, these are not under consideration for this Preserve. The soils within the Preserve have all been identified as having severe limitations. Severe means "that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures." These limitations affect what types and the locations of recreational activities permitted at TCP.

Table 2: Telegraph Creek Preserve Soil Attributes

Soil Types	Map Symbol	Total Acres	% of Preserve	Habitats (Range Site)	*Physical Attributes*			*Biological Attributes*				Limitations for Recreational Paths & Trails
					Wetland Class (1)	Hydrologic Group (2)	% Organic Matter	Potential as habitat for wildlife in--				
								Openland	Woodland	Wetland	Rangeland	
Boca Fine Sand	13	118.60	7%	south Florida flatwoods		B/D	1-3%	fair	poor	fair	good	Severe: wetness, too sandy
Cocoa Fine Sand	55	32.93	2%	longleaf pine-turkey oak hills		A	1-3%	poor	poor	very poor	--	Severe: too sandy
Copeland Sandy Loam, Depressional	45	22.98	1%	freshwater marshes/ponds	P	D *	2-6%	very poor	very poor	good	--	Severe: ponding
Daytona Sand	17	24.81	1%	sand pine scrub		B	.5-1%	poor	poor	very poor	--	Severe: wetness, too sandy
EauGallie Sand	9	48.49	3%	south Florida flatwoods		B/D	2-8%	poor	poor	poor	--	Severe: wetness, too sandy
Electra Fine Sand	76	1.97	0%	south Florida flatwoods		C	1-2%	poor	poor	poor	--	Severe: too sandy
Felda Fine Sand, Depressional	49	52.43	3%	freshwater marshes/ponds	P	B/D	1-4%	very poor	very poor	good	--	Severe: wetness, too sandy
Floridana Sand, Depressional	51	7.91	0%	freshwater marshes/ponds	P	D *	6-15%	very poor	very poor	good	--	Severe: ponding, too sandy
Hallandale Fine Sand	6	139.24	8%	south Florida flatwoods		B/D	2-5%	poor	poor	fair	poor	Severe: wetness, too sandy
Immokalee Sand	28	171.19	10%	south Florida flatwoods		B/D	1-2%	poor	poor	poor	--	Severe: wetness, too sandy
Isles Fine Sand, Depressional	39	2.32	0%	freshwater marshes/ponds	P	D *	1-2%	very poor	very poor	good	--	Severe: wetness, too sandy
Malabar Fine Sand	34	169.66	10%	slough	S	B/D	1-2%	poor	poor	fair	--	Severe: wetness, too sandy
Malabar Fine Sand, High	63	42.11	2%	south Florida flatwoods		B/D	1-2%	fair	poor	fair	fair	Severe: wetness, too sandy
Myakka Fine Sand, depressional	53	0.58	0%	fresh water marshes and ponds	P	D	1-2%	very poor	very poor	good	--	Severe: ponding, too sandy
Oldsmar Sand	33	550.82	32%	south Florida flatwoods		B/D	1-2%	fair	fair	poor	--	Severe: wetness, too sandy
Orsino Fine Sand	61	45.17	3%	sand pine scrub		A	<1%	poor	poor	very poor	--	Severe: too sandy
Pineda Fine Sand	26	89.40	5%	slough	S	B/D	.5-6%	fair	poor	fair	--	Severe: wetness, too sandy
Pineda Fine Sand, Depressional	73	29.86	2%	freshwater marshes/ponds	P	D *	.5-6%	very poor	very poor	good	--	Severe: ponding, too sandy
Wabasso Sand	35	26.49	2%	south Florida flatwoods		B/D	1-4%	poor	fair	poor	--	Severe: wetness, too sandy
Wabasso Sand, limestone substratum	42	149.83	9%	south Florida flatwoods		B/D	2-5%	poor	fair	poor	--	Severe: wetness, too sandy

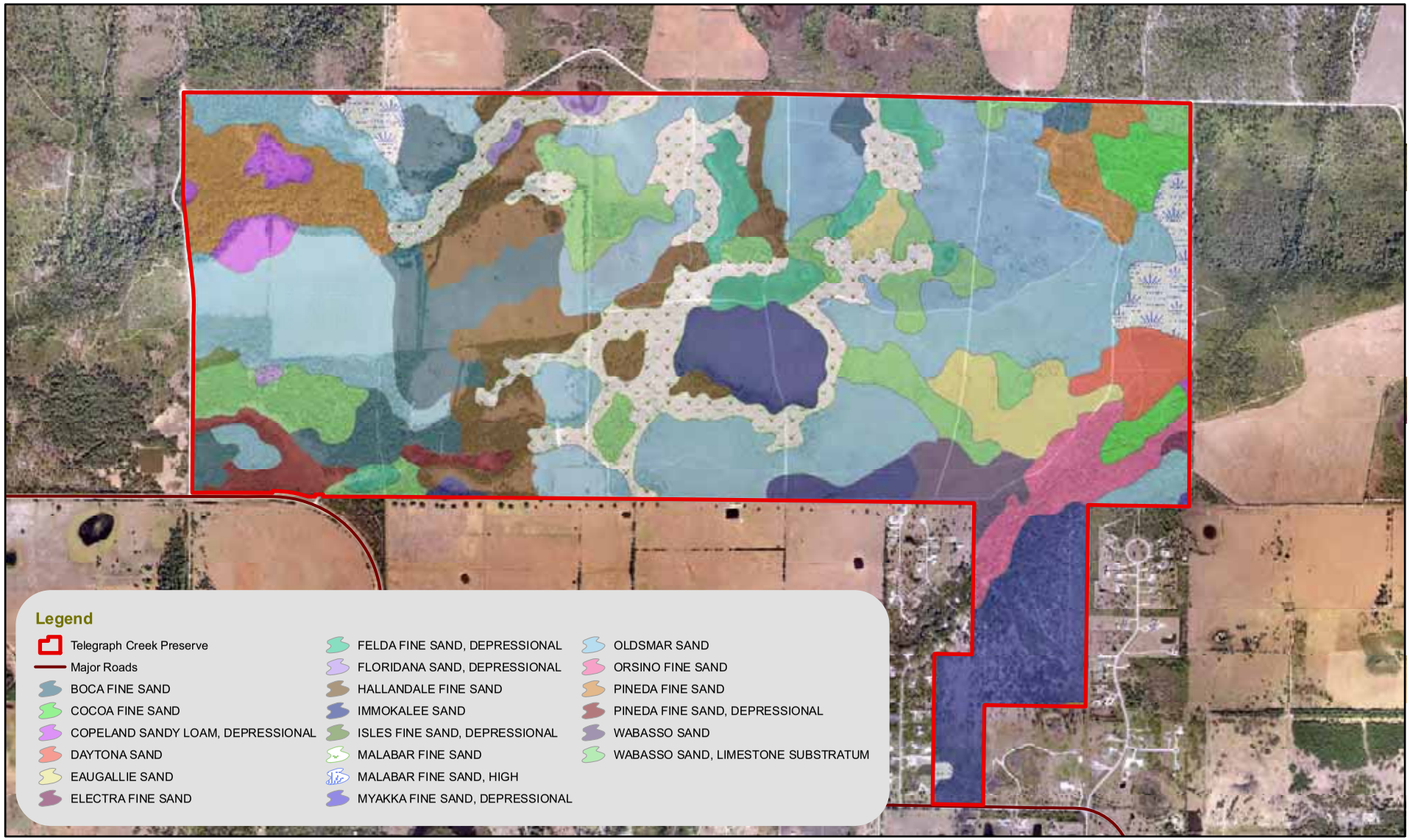
Color Key:

- Upland
- Wetlands Rarely Present (Under 20%)
- Wetlands Sometimes Present (20-40%)
- Wetlands Often Present (75-95%)
- Wetlands Very Often Present (100%)

(1) S - Slough (sheet flow): A broad nearly level, poorly defined drainage way that is subject to sheet-flow during the rainy season.
P - Ponding: Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

(2) * Water table is above the surface of soil
A - Soils having a high infiltration rate (low runoff potential) when thoroughly wet.
B - Soils having a moderate infiltration rate (low to moderate runoff potential) when thoroughly wet.
C - Soils having a slow infiltration rate (moderate to high runoff potential) when thoroughly wet.
D - Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet.

Figure 5: Soils Map



Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

M:\GISLAYERS\Projects\Parks_Rec\C2020\Telegraph_Creek_Preserve\TCP_LSP_2010\TCP_Soils.mxd
Map Prepared On: 6/4/10 by jwaller@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

v. Hydrologic Components and Watershed

TCP is within the Okeechobee Basin of the South Florida Water Management District's (SFWMD) Lower West Coast Region. The Preserve lies in three different watersheds: Telegraph Swamp, Tidal Caloosahatchee and West Caloosahatchee (Figure 6). Both Telegraph Swamp and Tidal Caloosahatchee watershed extend from Charlotte County into Lee County, while the West Caloosahatchee covers portions of Lee, Charlotte, Glades, Hendry and Collier Counties.

In this portion of Lee County, the Division of Natural Resources (LCDNR) has slightly different watershed boundaries. TCP lies within the Trout Creek, Otter Creek, Unnamed, Telegraph Creek and Franklin Run Watersheds (Figure 7). Two of these watersheds (Telegraph and Trout) originate in the Babcock Ranch Preserves, before flowing through the proposed Babcock Ranch development. The unnamed watershed originates in the proposed Babcock Ranch Development and all but the Trout Creek Watershed discharge into the Caloosahatchee River. The Otter Creek Watershed originates in TCP.

According to Lee County's Surface Water Master Management Plan (JEI, 1992) report for the Telegraph Creek Watershed done by Johnson Engineering states, "As development occurs throughout the watershed, erosion controls and other construction BMP's will be required to prevent excessive turbidities and sedimentation in the receiving waters." C20/20 staff has found man-made ditches on the Preserve that are washing out into Telegraph Creek that will need to be addressed.

Figure 6: SFWMD Watersheds

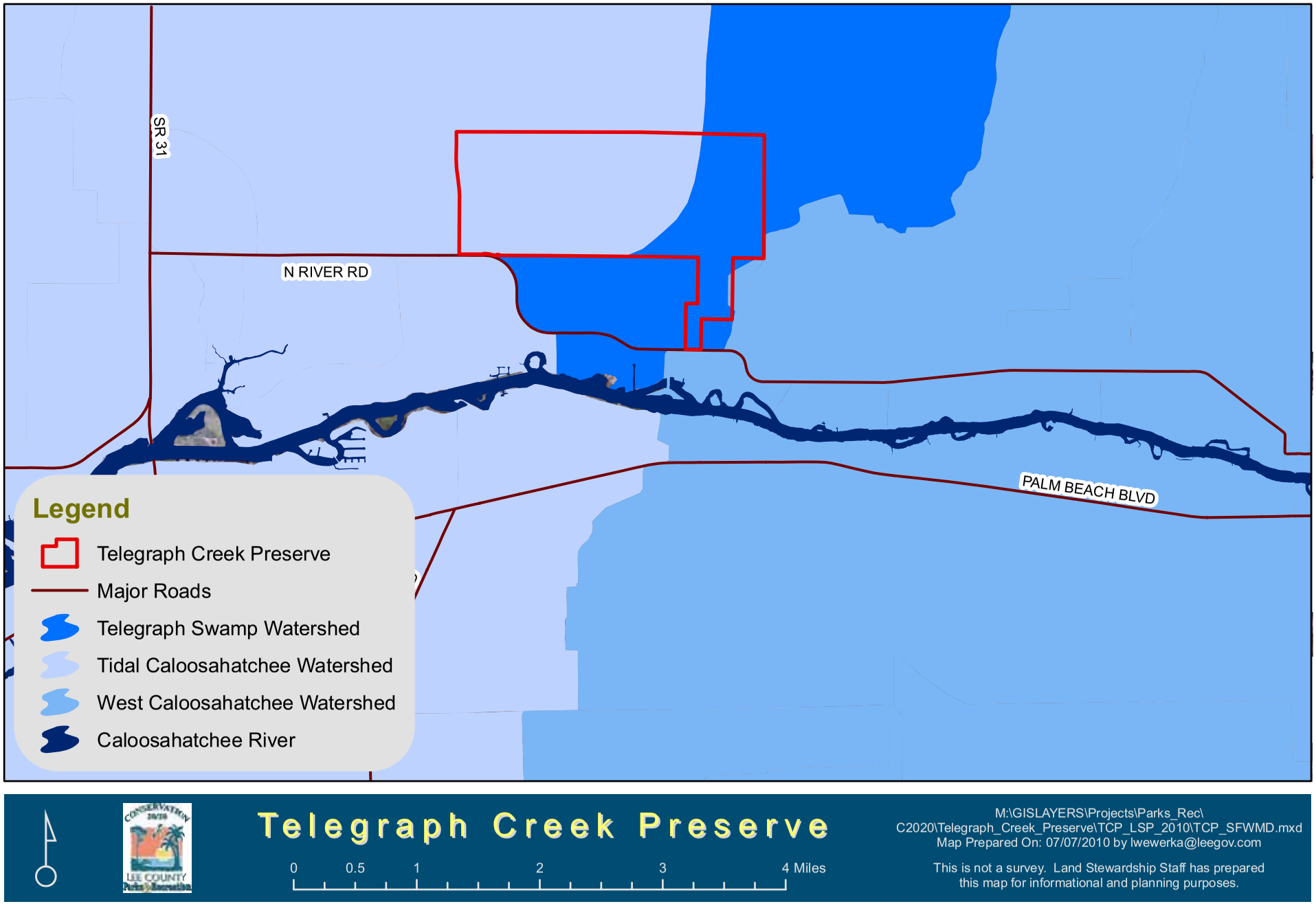
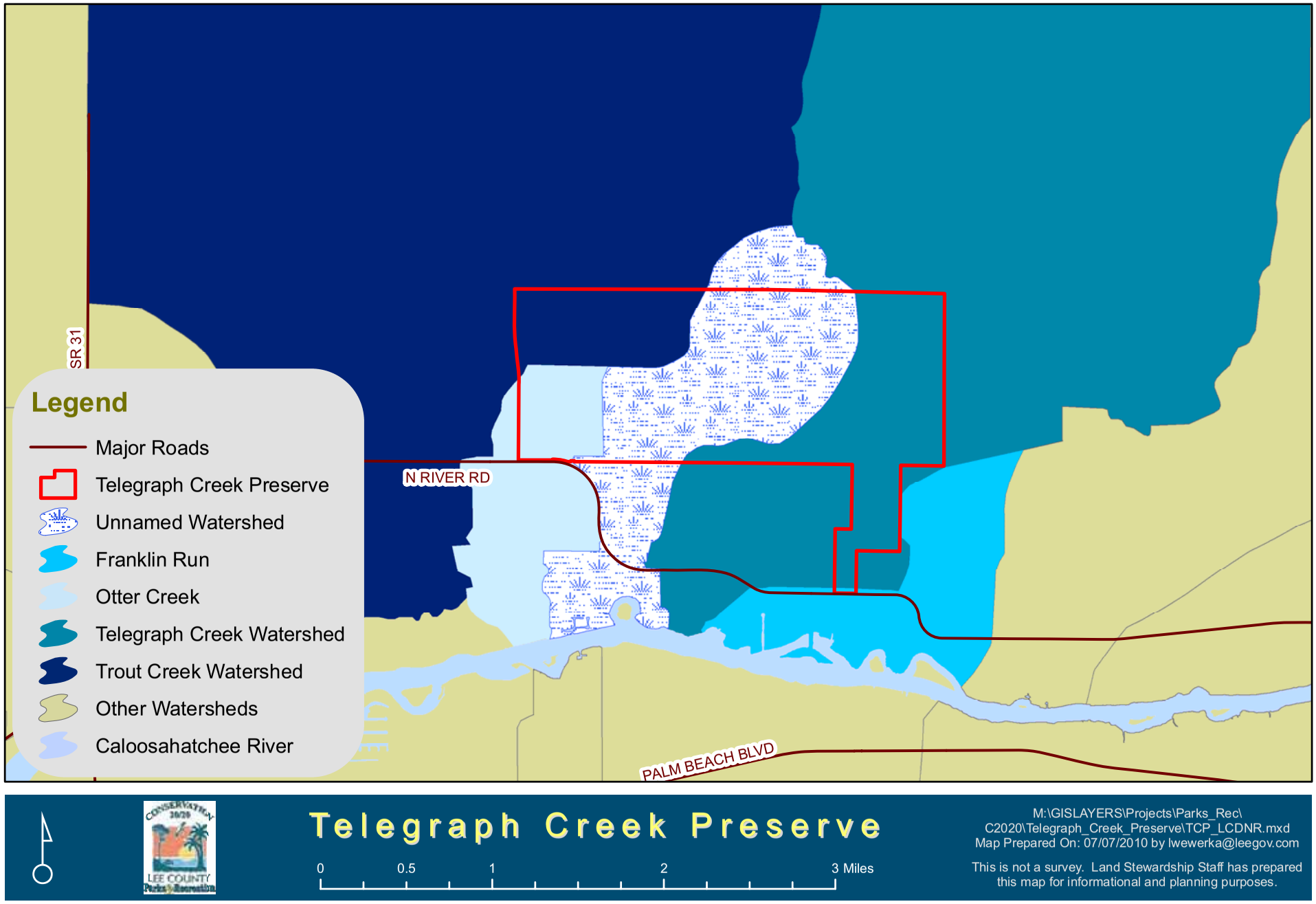


Figure 7: LCDNR Watersheds



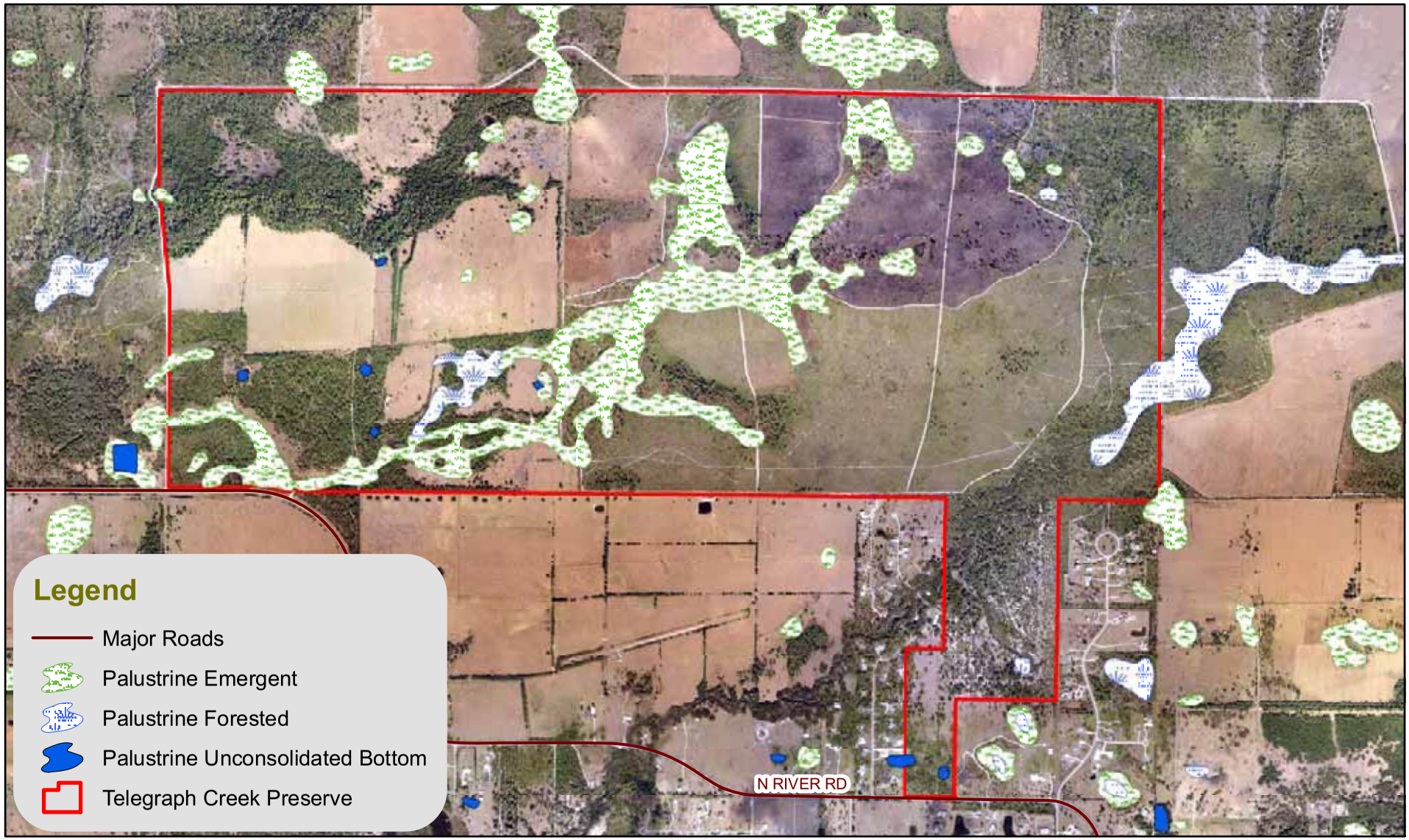
Scaling down from watersheds to wetlands, the United States Fish and Wildlife Service (USFWS) directed its Office of Biological Services to conduct an inventory of the nation's wetlands in 1974. This National Wetlands Inventory (NWI) became operational in 1977. Wetlands were identified on aerial photography by vegetation, visible water features and geography, and subsequently classified in general accordance with the Classification of Wetlands and Deep Water Habitats of the United States (Cowardin et al. 1979).

Figure 8 identifies the variety of palustrine wetlands as identified by NWI. Palustrine systems are all non-tidal wetlands dominated by trees, shrubs, persistent emergent aquatic plants, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5%. The majority of the palustrine wetlands located on TCP (~191.5 acres) are emergent. Emergent wetlands are characterized by erect rooted, herbaceous hydrophytes, excluding mosses and lichens that are present for most of the growing season. A variety of grasses, sedges and other herbaceous plants such as spadder dock (*Nuphar advena*), arrowhead (*Sagittaria spp.)* and dotted smartweed (*Polygonum punctatum*) are typically found in this wetland category at the Preserve. Forested wetlands are characterized by woody vegetation that is 6 meters (19.6 feet) tall or taller. These areas typically have an overstory of trees, an understory of young trees or shrubs and an herbaceous layer. The forested wetlands identified in the NWI are some of the Preserve's hammocks near Telegraph Creek as well as one of the hydric pine flatwoods communities. The seven unconsolidated bottom wetlands are all man-made ponds, most installed for cattle. Unconsolidated bottom wetlands have less than 30% vegetative cover with a lack of large stable surfaces for plants and animal attachment.

In addition to the NWI wetlands, there are a variety of wetlands not detected including two blackwater streams (Telegraph Creek and Stricklin Gully), two dome swamps, hydric flatwoods, wet prairies and depression marshes. More information about these wetlands can be found in the Natural Plant Communities section of this plan.

The final hydrological component to TCP is the assortment of ditches, berms, canals, internal roads and cattle wells. These were primarily installed for agricultural and cattle operations. They influence the water flow on the site by both interrupting sheet flow and holding water for extended periods in some areas while excessively draining other areas. These unnatural features will be discussed more fully in the Internal Influences section of this plan.

Figure 8: National Wetland Inventory Map



B. Biological Resources

i. Ecosystem Function

TCP contains a diverse range of wetland and upland plant communities. Pine flatwoods serve as a very important habitat for a variety of birds, small mammals, reptiles and amphibians and some large mammals including white-tailed deer and Florida panther. Many species of birds find shelter in the palmetto understory, nest in the tall pines and forage in the grasses and canopy. The oak toad (*Anaxyrus quercicus*) will dig burrows in the sandy soil and hunt for spiders and insects. During a severe flood, the flatwoods serve as a water storage area to help protect adjacent land owners from flooding (Tiner 1998) and replenish the ground water.

Florida has more thunderstorm days per year than anywhere else in the country and in turn one of the highest frequencies of lightning strikes of any region in the United States. Fire is an important element affecting the health of pine flatwoods. Fire shapes ecosystem processes in the flatwoods including creation of soil conditions suitable for germination of seeds of some species, turnover of litter, humus and nutrients, reduction of competition from hardwoods and increasing the hardiness of some plant species (Myers and Ewel 1990). Following initial exotic removal, fire will be a very useful stewardship tool and has already been implemented at TCP.

Mechanical thinning and rollerchopping of pine flatwoods is beneficial, especially in areas that have suffered fire suppression or have had hydrologic alterations to surrounding lands which in turn creates conditions favoring growth of pines over hardwood species. Without regular fire or mechanical work, pine flatwoods can become dense stands of palmetto and have tall weak pines which block sunlight from reaching the ground, further decreasing the coverage of native grasses and wildflowers that gopher tortoises, quail and many other species depend upon for food.

The wetlands of south Florida are important to people and to a variety of wildlife. Wetlands at TCP provide places for birds to feed and for fish and frogs to live and breed. Additionally, people rely on these marshes to improve water quality and recharge the aquifer. The seasonal changes in southwest Florida profoundly affect the hydrologic components at this Preserve. During the late spring and summer months, the rain begins to fall and the wetlands fill to capacity. Fish populations begin to increase both in number and biomass. In the fall when the rains end, the water recedes and the fish are concentrated in the shallow marshes. The wading birds come in to feast and this aids the remaining fish by decreasing the density and increasing the availability of dissolved oxygen. Most wildlife utilizing these communities have adapted by migrating from one wetland to another as the shallow ones become dry.

A variety of marshes are also very important to some species of wading birds for their nesting success. For example, the white ibis (*Eudocimus albus)* chooses nesting sites near marshes that have appropriate drying conditions. Some herons and wood storks need specific falling water conditions over a prolonged four-month nesting season. The faster the marsh dries, the sooner nesting starts. If the water level rises, then nesting success declines (Myers and Ewel 1990). This drying period is not only important to the fauna but also to the flora. Plants in these areas also benefit from the seasonal wet/dry flux. The plants in these wetlands become completely dry, die, decay and release nutrients that are bound in their tissues. This makes the soils highly productive for the next wet season. Typically, these plants have low nutrient requirements so they stockpile the excess, which is beneficial to herbivores feeding upon them.

The small pockets of cypress on TCP provide excellent cover and foraging for woodpeckers, warblers and other migratory song birds. Animals depend on the health and long-term viability of the cypress communities for nesting, breeding and feeding. The Florida cottonmouth (*Agkistrodon piscivorus conanti*) uses mats of debris in the swamp ferns as sunning platforms. Yellow-crowned night herons (*Nyctanassa violacea*) build their nests in the trees and white ibis and great egrets (*Ardea alba*) roost in the canopy. To sustain the health of the cypress communities, water quality and quantity must be protected and improved.

The hammock and mesic communities along with the wetland areas of TCP provide places for birds to feed and for fish and frogs to live and breed. Additionally, they improve water quality and recharge the aquifer. The seasonal changes in southwest Florida affect the hydrologic components at this Preserve. During the late spring and summer months, the rain begins to fall and the soils of the mesic and hydric communities become saturated and standing water sits on the site, slowly percolating down to the aquifer, or forming sheetflow and moving across the watershed. In the fall when the rains end, the water recedes but the soils often remain saturated less than a foot below the surface.

Even disturbed areas of the Preserve, such as the pastures and artificial ponds/canals that comprise nearly 22 percent of the Preserve, are habitat for many wildlife species. In the wet summer months standing water creates feeding grounds for many wading birds including snowy egrets (*Egretta thula*) and great blue herons (*Ardea herodius*). The fields and ponds also provide foraging and nesting habitats for sandhill cranes and American alligators. In the fall, these fields provide habitat for resident mottled ducks (*Anas fulvigula)* and migratory blue-winged teal (*Anas discors)*.

ii. Natural Plant Communities

TCP consists of 37 natural and altered plant communities; the majority of which consists of dry prairie, mesic flatwoods and pastures. Approximately 45% of the plant communities are designated as "disturbed" typically due to alterations in the fire regime, invasive exotic plant infestations and/or changes in the natural drainage patterns. Approximately 25% of TCP is categorized as various altered communities. Altered communities are defined as habitats that have been severely impacted by humans. Figure 9 shows the location of the plant communities found at TCP. The plant communities are defined using the Guide to the Natural Communities of Florida (2010) prepared by Florida Natural Areas Inventory (FNAI).

The following are descriptions of the dominant plants and characteristic animals found within each community. The percent cover is slightly over 100% due to rounding off values. A complete list of plant species identified during site inspections to TCP can be found in Appendix A. This list will be updated on a seasonal basis to identify plants during their inflorescence phase.

Dry Prairie – 493.6 acres, 29% coverage of TCP

Dry prairie (or palmetto prairie) is typically a community of low shrubs, grasses and forbs with very few, if any pines (*Pinus spp.).* It is believed that this community's structure is created by high fire frequency combined with flat topography and soil types that tend to flood and hold water longer than mesic flatwood communities. Characteristic plants growing in dry prairies include low saw palmetto and wax myrtle (*Myrica cerifera*), dwarf live oak (*Quercus minima*) as well as a wide variety of herbaceous species including lopsided indiangrass (*Sorghastrum secundum*), milkworts (*Polygala spp.*), wiregrass (*Aristida spiciformis)* and yellow-eyed grasses (*Xyris spp.).* The dry prairies at the Preserve are located on the eastern half, north of Telegraph Creek.

Wildlife seen in the dry prairies at TCP includes northern bobwhite, eastern meadowlark (*Sturnella magna*), eastern towhee (*Pipilo erythrophthalmus*), Florida sandhill crane (*Grus canadensis pratensis*), oak toads and bobcat.

Natural fire regimes for dry prairies are 1-2 years. The majority of the dry prairie at TCP was regularly burned by the former owner before the land was purchased by a development company in 2004. After the Preserve was purchased by C20/20 in 2009, all burn units that are dominated by dry prairie have been burned once within the first two years after purchase.

Exotic plant species coverage in this community is <5%.

Dry Prairie (Disturbed) – 12.4 acres, <1% coverage of TCP

There are three areas of dry prairie at the Preserve that are currently considered "disturbed". The palmetto height and pine tree density is greater than average, probably because these are isolated patches that have not been burned regularly.

Mesic Flatwoods – 41.9 acres, 2% coverage of TCP

Synonyms for this plant community include pine flatwoods and pine savannahs. Mesic flatwoods occur on relatively flat, moderately to poorly drained soils. Standing water is common for brief periods during the rainy season. Mesic flatwoods are characterized as having an open canopy with widely spaced pine trees and a dense ground cover of herbs and shrubs. Typical plants growing in this community at TCP include south Florida slash pine, saw palmetto, coastal plain staggerbush (*Lyonia fruticosa*), whitehead bogbutton (*Lachnocaulon anceps*), bluestem grasses, pineywoods dropseed (*Sporobolus junceus*) and bottlebrush threeawn (*Aristida spiciformis*).

A few animals that have been documented in the mesic flatwoods at the Preserve include white-eyed vireo (*Vireo griseus*), red-bellied woodpecker (*Melanerpes carolinus*), pine warbler (*Dendroica pinus*), great horned owl (*Bubo virginianus*) and squirrel treefrog (*Hyla squirella*).

The average fire return interval in mesic flatwoods is 3.2 years with a historic maximum of ten years between burns. Without frequent fires mesic flatwoods will succeed into hardwood-dominated forests whose closed canopy will gradually eliminate the groundcover of herbs and shrubs. On the other hand, too frequent or too hot fires can eliminate pine recruitment and eventually transform the mesic flatwoods into dry prairie. Research has shown that varying the season and interval between burns produces the most diversity of herbaceous ground cover plants (Robbins and Myers 1992).

Portions of the mesic flatwoods community within the Preserve contains exotic plant coverage of 0 – 25% consisting of Brazilian pepper (*Schinus terebinthifolius)*, downy rose-myrtle (*Rhodomyrtus* tomentosa) and melaleuca (*Melaleuca quinquenervia*).

Mesic Flatwoods (Disturbed) – 295.2 acres, 17% coverage of TCP

The majority of the mesic flatwoods at TCP does not have a recent history of burning and has become overgrown with a thick, high palmetto understory and a dense pine canopy. Ideal ranges for natural areas of south Florida slash pine range from 40-50 with a range of 30-80 square feet of basal area which provides adequate sunlight for herbaceous plants

and new pine recruitment as well as sufficient pine needles to carry fire (FDOF et. al 2008, Weston 2009). Approximately 275 acres, mainly located on the western half of the Preserve, as well as the northeast corner would benefit from shrub reduction and tree thinning. A large portion (162 acres) of those flatwoods is also impacted by 25-74% coverage of invasive exotic plants in the understory. The two most typical exotics are Brazilian pepper and downy rose-myrtle.

Pasture - Improved – 290.5 acres, 17% coverage of TCP

This disturbed plant community is composed of forage grasses with minimal native groundcover and is currently being grazed by cattle. Bermuda (*Cynodon dactylon*) and bahaiagrass (*Paspalum notatum*) are the most abundant species, but several weedy natives are typically found including dogfennel (*Eupatorium capillifolium*). There are some portions that are slightly lower in elevation and have some plants more typically seen in wetlands including maidencane and manyflower marshpennywort (*Hydrocotyle umbellata)*. All of the pastures on the western half of the Preserve fit this category.

Scrubby Flatwoods – 17.2 acres, 1% coverage of TCP

Scrubby flatwoods are characterized by an open canopy of widely scattered south Florida slash pine trees with a sparse, shrubby understory of scrub oaks, myrtle oak (*Quercus* myrtifolia), Chapman's oak (*Quercus* chapmanii), running oak (*Quercus elliottii*) as well as understory plants including pennyroyal (*Piloblephis rigida*), gopher apple (*Licania michauxii*) and shiny blueberry (*Vaccinium myrsinites*). There are small bare sand openings lacking vegetation throughout this community that are conducive to scrub jay acorn caching. The white sandy soil found here is typically several feet deep and drains rapidly. These areas usually do not flood even under extremely wet conditions. At TCP, scrubby flatwoods are located on the eastern side of the arm and a small patch near the central-eastern boundary on the main portion of the Preserve.

Animals seen in this community include gopher tortoises (*Gopherus polyphemus*), eastern phoebes (*Sayornis phoebe*), eastern diamondback rattlesnakes (*Crotalus adamanteus*) and pine woods treefrogs (*Hyla femoralis*). Florida scrub jays were documented in this community on the eastern side of the arm in 2003 by environmental consultuants. Subsequent surveys conducted by a different firm in 2005/2006 did not record any scrub jays on the Preserve and none has been observed by staff or volunteers to date.

Natural fire in this community occurs every 5-15 years. This longer return interval is due to the lack of ground vegetation, open sandy patches and abundance of non-combustible scrub-oak leaf litter that is present. In some

cases, shorter fire returns, utilizing prescribed burns, are desirable to help control oak dominance in fire suppressed situations.

Exotic plant species cover in this community is <5%.

Scrubby Flatwoods (Disturbed) – 80.6 acres, 5% coverage of TCP

The majority of the scrubby flatwoods on the Preserve have not been regularly burned and as a result, both the saw palmetto and scrub oak understory has become too high and thick to support scrub jays. The dense understory is also undesirable for gopher tortoises that depend on a wide variety of understory plants and open sandy areas to lay their eggs. Additionally, Virginia live oak trees (*Quercus virginiana*), from adjacent hammock communities have encroached into the scrubby flatwoods. A grant, awarded by the Florida Fish and Wildlife Conservation Commission (FWC) in March 2010, allowed C20/20 staff and contractors to rollerchop some of the palmetto and smaller oaks as well as cutting down some of the larger oaks in the arm of the Preserve.

Pasture- Semi-improved – 69.7 acres, 4% coverage of TCP

This disturbed plant community is characterized by a mix of planted forage grasses and native groundcover and typically has some native trees and shrubs. These areas at TCP include south Florida slash pine, saw palmetto, netted pawpaw (*Asimina reticulata*), bluestem and other native grasses in addition to the non-native bahiagrass and Bermuda grass. Semi-improved pastures are located to the west of the dry prairie, on the arm and on the west boundary (southern half) of the Preserve.

Wet Flatwoods – 48.4 acres, 3% coverage of TCP

Wet flatwoods are characterized by relatively open-canopy forests of scattered pine trees and some cabbage palms (*Sabal palmetto)* with a sparse understory and a dense ground cover of hydrophytic herbs and low shrubs. Wet flatwoods occur on relatively flat, poorly drained terrain where water frequently stands on the surface for one or more months of the year. This type of flatwoods can be distinguished from mesic and scrubby flatwoods by the absence or low levels of saw palmetto and low-growing oaks. Many plants here are under the stress of water saturation during the wet season and under the stress of dehydration during the dry season. In addition to south Florida slash pines, some of the more common plants documented in this community at the Preserve include wax myrtle, peelbark St. John's-wort (*Hypericum fasciculatum*), blue maidencane (*Amphicarpum muhlenbergianum*) and hairawn muhly (*Muhlenbergia capillaris*). The wet flatwoods at TCP are located within the regularly burned, eastern half.

Animals documented utilizing this plant community include red-shouldered hawk (*Buteo lineatus*), blue-gray gnatcatcher (*Polioptila caerulea*), downy woodpecker (*Picoides pubescens*) and white-tailed deer.

Natural fire regimes for this plant community range from every 1-4 years. Without a regular fire, wet flatwoods will gradually be invaded by shrubs and the closed canopy would gradually eliminate the groundcover herbs and shrubs.

Exotic cover in this community is typically <10%, and the primary invasive exotics are melaleuca, caesarweed (*Urena lobata*) and torpedo grass (*Panicum repens*).

Wet Flatwoods (Disturbed) – 50.7 acres, 3% coverage of TCP

Portions of the wet flatwoods at the Preserve are considered "disturbed" due to lack of fire and or heavy invasive plant coverage in the midstory. Invasive exotic plant removal, wax myrtle removal and pine tree thinning will be used to restore these areas.

Mesic Hammock Community – 1.1 acres, <1% coverage of TCP

Mesic hammock is a closed canopy community with live oaks and cabbage palms in the overstory, saw palmetto, American beauty berry (*Callicarpa americana)*, hog plum (*Ximenia americana*) and sparkleberry (*Vaccinium arboretum*) in the understory. Herbaceous plants include witchgrasses (*Dichanthelium spp.*) and bracken fern (*Pteridium aquilinum*). Epiyphytes are a characteristic feature of mesic hammocks and include shoestring fern (*Vittaria lineata*), golden polypody (*Phlebodium aureum*), resurrection fern (*Pleopeltis polypodioides*) and bromeliads (*Tillandsia spp.*). Mesic hammock soils tend to be well-drained but the heavy canopy cover and leaf litter keep the soils moist and fire is uncommon. Only one small mesic hammock on the western boundary of the Preserve is not considered to be disturbed.

Wildlife documented in this community includes American redstarts (*Setophaga ruticilla*), brown thrashers (*Toxostoma rufum*), barred owls (*Strix varia*) and eastern gray squirrels (*Sciurus carolinensis*).

Exotic plant cover in this community is <10%.

Prairie Mesic Hammock – 1.2 acres, <1% coverage of TCP

Some mesic hammock communities, typically isolated patches occurring within a larger matrix of pyrogenic vegetation, experience low intensity fires on a regular basis, leading to a somewhat species-depauperate canopy of cabbage palm, live oak, or a mixture of the two species, with saw palmetto common in the understory. At the Preserve, there are two prairie mesic

hammocks, one within a dry prairie and another within a mesic flatwoods community.

Mesic Hammock (Disturbed) – 45.8 acres, 3% coverage of TCP

The majority of the mesic hammock communities at TCP are currently categorized as disturbed. Exotic plant cover ranges between 25-75%. Brazilian pepper, caesarweed and rosary pea (*Abrus precatorius*), and rose myrtle are the primary invasive exotic species. Feral hogs have caused considerable damage to this community at TCP and their soil disturbance is a likely cause of the heavy invasive plant coverage. Although not invasive, saw palmetto in portions of the disturbed mesic hammock ranges from 5-12 feet in height and increases the possibility of a catastrophic wildfire. The disturbed mesic hammocks at TCP are mainly located adjacent to Telegraph Creek and the downstream portions of Stricklin Gully.

Prairie Mesic Hammock (Disturbed) – 0.4 acres, <1% coverage of TCP

There is an isolated prairie mesic hammock community near the northwest corner of the Preserve that understory is dominated by Brazilian pepper.

Marl Prairie – 39.9 acres, 2% coverage of TCP

Marl prairies are sparsely vegetated (20-40% cover of graminoid type species) found on marl substrates in south Florida. Marl is a fine white mud formed from the calcite made of periphyton. This soil is highly alkaline and impermeable as compared to the sandy soils of a wet prairie. They are seasonally flooded (2-4 months) with shallow water. Typical plants at the preserve include starrush whitetop (*Rhynchospora colorata*), gulfdune paspalum (*Paspalum monostachyum*), yellow-eyed grasses and pineland heliotrope (*Heliotropium polyphyllum*). The marl prairie at TCP is located to the west of the palmetto prairie.

Wildlife species found in this community at the Preserve include Bachman's sparrow (*Aimophila aestivalis*), Florida sandhill cranes and oak toads.

Marl prairies normally dry out during the winter and are subject to fires at the end of the dry season; the most acres naturally burn in May. Fires at this time stimulate flowering of the dominant grasses. Herbaceous species recover rapidly from fire and biomass reaches pre-fire levels at the end of two years. For the first two years after fire this community will burn only patchily, if at all.

Exotic plant cover in this community is <5% primarily consisting of melaleuca.

Marl Prairie (Disturbed) – 1.1 acres, <1% coverage of TCP

On the southeast side of the marl prairie, there is a small patch dominated by wax myrtle. Invasion by woody species in this plant community is typically caused by shorter hydroperiods.

Wet Prairie – 36.9 acres, 2% coverage of TCP

Wet prairies are described as a treeless plain with a ground cover of grasses and herbs including a wide variety of sedges (*Rhynchospora spp., Scleria spp.*), as well as, whitehead bogbutton (*Lachnocaulon anceps*), shortleaf rosegentian (*Sabatia brevifolia*) and gaping panicum (*Panicum hians*). This community occurs on relatively flat, poorly drained low areas and soil typically consists of sands with a clay or organic component. There are 22 wet prairies scattered throughout the Preserve, only seven are larger than 1 acre.

Wet prairie communities are extremely important in providing breeding and foraging habitat for a variety of wildlife. Animals documented utilizing this community at TCP include Wilson's snipe (*Gallinago delicata*), Florida cricket frogs (*Acris gryllus dorsalis*) and striped mud turtles (*Kinosternon baurii*).

Wet prairies are fire dependant communities with some species dependant on fire to stimulate reproduction. Typically these areas burn every 2-3 years and become invaded with wax myrtle and other trees and shrubs with longer fire intervals. These larger plant species eventually reduce the hydroperiod through evapotranspiration and increased biomass as well as shading out the groundcovers.

Exotic plant cover, primarily torpedo grass and melaleuca, varies in this community from 0-10%.

Wet Prairie (Disturbed) – 27.5 acres, 2% coverage of TCP

Many of the larger wet prairie communities at the Preserve have been invaded by wax myrtle, probably due to lack of fire, or fires primarily being set during the winter months. A combination of mechanical and chemical removal will likely be necessary to reduce the cover since there is not sufficient understory in these areas to carry a fire.

Scrub (Disturbed) – 35.3 acres, 2% coverage of TCP

Scrub communities are located on dry, infertile sandy soils and dominated with a thicket of three species of oak: myrtle, sand live (*Quercus geminata*) and Chapman's. Two other common shrubs found in this community are saw palmetto and fetterbush (*Lyonia lucida*). Within the oaks are scattered small patches of bare soils. At TCP, deer lichen (*Cladonia sp.*) is also common on the

ground and oak mistletoe (*Phoradendron leucarpum*) is fairly common in the canopy. The scrub is categorized at the Preserve as "disturbed" because there is no known burn history and it is in need of both shrub reduction and fire. This should reduce the height of the canopy and create more open patches of bare ground, which are important for creating habitat for herbaceous species as well as providing caching spots for scrub jays. The scrub at TCP is located on the east boundary, north of Telegraph Creek.

Wildlife utilizing the scrub at TCP includes gopher tortoises, palm warblers (*Dendroica palmarum*) and nine-banded armadillos (*Dasypus novemcinctus*).

Fire return intervals on oak-dominated scrub are estimated to be between 5 and 20 years. This is due to the fact that although the plants are highly flammable, it is difficult for scrub to become ignited due to the lack of fine fuels on the ground as compared to flatwoods or prairie communities. Many land managers attempt to burn scrub at ideal intervals for scrub jays. The goal is to allow the oaks to grow enough to become mature and produce acorns, but then to burn the scrub before it attains heights greater than 5.5 feet. Often, the burn rotation must be more frequent in long-unburned scrub like what is found at TCP for the first few burns.

Invasive exotic plant cover in this community is estimated at <5%.

Road – 32.1 acres, 2% coverage of TCP

There is a 0.4 mile paved driveway that leads into the Preserve on the western side and an additional 7.7 miles of fairly large dirt roads, the majority of which are found in the dry prairie portion of the Preserve and were originally created for fire breaks and recreational hunting.

Xeric Hammock – 19.2 acres, 1% coverage of TCP

Xeric hammock communities are created on well-drained soils where fire exclusion has allowed the oak canopy to reach sufficient height and thickness to shade out most of the herbaceous understory. Typical oaks found in this plant community are the same as those found in scrub (myrtle, sand live and Chapman's), although Virginia live and laurel oaks (*Quercus laurifolia*) as well as south Florida slash pines are occasionally found in the canopy. Mid-story plants include saw palmetto, fetterbush and common persimmon (*Diospyros virginiana*). The understory is typically sparse or absent. Xeric hammock communities at TCP are located on the north and south boundaries of the scrub community.

Wildlife seen in the xeric hammock at the Preserve includes feral hogs (*Sus scrofa*), white-eyed vireos and Carolina wrens (*Thryothorus ludovicianus*).

Xeric hammocks are a climax community, as a result of years of fire exclusion. The only way to return this community to its former plant community is through severe burns during extremely dry conditions, mechanical removal and/or herbicide applications. Long-term management goals for this community may include restoring this portion of the Preserve to a scrub or scrubby flatwoods community.

Invasive exotic plant cover in this community is estimated at <10% and primarily consists of scattered Brazilian pepper, rosary pea and caesarweed.

Slough Marsh (Disturbed) – 14.6 acres, 1% coverage of TCP

Slough marsh communities are herbaceous plant communities growing in channels with intermittently flowing water. Vegetation grows in zones, depending on the duration of standing water and the water depth. The deeper zones contain plants such as bulltongue arrowhead (*Sagittaria lancifolia*) and pickerelweed (*Pontederia cordata*) while the shallower edges are dominated by sand cordgrass (*Spartina bakeri*), various sedges (*Rhynchospora spp*., *Fimbristylis spp*., *Eleocharis spp*.) and other grass species. The disturbed slough marsh at TCP is located in the southwest corner of the Preserve. Aerial interpretation indicates this area was a portion of a wetland system that was cleared and the flow was cut off in the 1970s (see the Land Use History section for more details and maps).

Wildlife found in this community at the Preserve includes snowy egrets, gray catbirds (*Dumetella carolinensis*), tree swallows (*Tachycineta bicolor*) and killdeer (*Charadrius vociferous*).

Fire should be allowed to burn from adjacent uplands into slough marsh communities and naturally extinguish. This helps to prevent shrub encroachment by wax myrtle, coastalplain willow (*Salix caroliniana*) and groundsel tree (*Baccharis halimifolia*).

Invasive exotic coverage in this community is estimated at <10% and includes torpedo grass and melaleuca.

Canal/Ditch – 11.8 acres, 1% coverage of TCP

There are several ditches within the Preserve boundary that vary from shallow linear ditches associated with the pastures to a several-foot deep ditch on the arm that is connected to Telegraph Creek.

Clearing – 9.2 acres, 1% coverage of TCP

There are four areas on the Preserve that are considered clearings. Two are associated with the cattle operations on the western half of the Preserve. Two

are located on the northeast corner of the Preserve. These are the former location of a hunting cabin and a nearby opened area that was used for hunting.

Invasive Exotic Monoculture – 9.0 acres, 1% coverage of TCP

FNAI defines this disturbed community as a stand of invasive exotic plants that has eliminated, or nearly eliminated native vegetation. The exotic monocultures at TCP consist of Brazilian pepper. The exotic monocultures on the western half of the Preserve are linear features, associated with fences and ditches. The ones located on the arm are associated with various land clearing activities.

Depression Marsh – 8.7 acres, 1% coverage of TCP

Synonyms for this community include isolated wetland, ephemeral pond and seasonal marsh. Depression marshes are characterized as shallow, usually rounded depressions in sand substrate which typically consist of open, treeless areas with herbaceous vegetation that is often growing in concentric bands. They are often found within fire-maintained plant communities like mesic flatwoods or dry prairies. Plants found in this community at TCP range from beaksedges and peelbark St. John's-wort in the shallow margins to alligatorflag (*Thalia geniculata*) and spadderdock. Hydrologic conditions vary, with most depression marshes drying in most years. Hydroperiods range widely from as few as 50 days or less to more than 200 days per year. There are eight depression marshes scattered throughout the western half of the Preserve.

Depression marshes are considered extremely important in providing breeding or foraging habitat for numerous amphibian species and wading birds. Animals using this community on-site include great egrets (*Ardea alba*), great blue herons and Florida cricket frogs.

Fire is important to maintaining this community by restricting the invasion of shrubs and trees, which would eventually reduce the hydroperiod through increased evapotranspiration and biomass as well as shading out the wetland herbaceous vegetation. The duration between burns will depend on the surrounding natural community.

Invasive exotic coverage in this community at TCP is typically <10%.

Depression Marsh (Disturbed) – 2.8 acres, <1% coverage of TCP

There are three depression marshes, all located on the western half of the Preserve that are categorized as disturbed due to heavy invasive exotic plant coverage (Brazilian pepper) and/or thick wax myrtle. In general, these marshes are near areas that were disturbed for anthropomorphic activities.

Blackwater Stream – 7.7 acres, <1% coverage of TCP

Telegraph Creek, which separates the main portion of the Preserve from the arm in the southeast corner of the Preserve, is characterized by FNAI as a blackwater stream. Blackwater streams are the most widely distributed and numerous riverine systems in the southeast Coastal Plain. They are created from broad areas that collect rainfall that is slowly discharged into the stream. The water is tea-colored from the tannins and organic matter collected during this upstream drainage. Plants growing on the banks of the creek include saw palmetto, bald cypress (*Taxodium distichum*), eastern poison ivy (*Toxicodendron radicans*) and Virginia willow (*Itea virginica*).

Animals that have been documented utilizing the stream and bank vegetation include green treefrogs (*Hyla cinerea*), Carolina wrens and American alligators.

Exotic plant coverage varies between 0-50% for the majority of the creek bank and consists of Brazilian pepper and an occasional small patch of small-leaf climbing fern (*Lygodium microphyllum*).

Slough (Disturbed) – 6.6 acres, <1% coverage of TCP

Sloughs are the deepest drainage ways within swamps and marsh systems. They are broad channels inundated with slow moving or stagnant water, although they can completely dry out. Plant species include bald cypress, common buttonbush (*Cephalanthus occidentalis*) and pond apple (*Annona glabra*). Submerged plants include bulltongue arrowhead and creeping primrosewillow (*Ludwigia repens*). Sloughs are very vulnerable to hydrological disturbances. At TCP, Stricklin Gully is categorized as a disturbed slough. Historic aerials indicate that it was a natural system that more recently was disturbed by surrounding farm roads as well as cattle operations within the Preserve. Although there are not living cypress, numerous cypress stumps are found within this community.

Wildlife documented in this community at TCP includes white-eyed vireos, Carolina wrens and Florida leopard frogs (*Lithobates sphenocephalus sphenocephalus*).

Brazilian pepper is the primary invasive exotic found in this plant community. In some areas it consists of almost 75% of the understory.

Hydric Hammock (Disturbed) – 4.8 acres, <1% coverage of TCP

Hydric hammock communities are a closed canopy community primarily consisting of oaks and palms with a scattered understory and moderate cover of herbaceous species. The primary canopy trees found at TCP include laurel oak and cabbage palm. Additional understory species include swamp bay (*Persea palustris*), wax myrtle and wild coffee (*Psychotria nervosa*). At TCP, this

community is located adjacent to portions of Stricklin Gully, but has a slightly higher elevation.

Wildlife documented in this community includes gray catbirds, green anoles (*Anolis carolinensis*) and brown thrashers.

The hydroperiod of hydric hammocks is typically short, but soil moisture typically remains high during the year. Due to their generally saturated soils and the sparse herbaceous cover, hydric hammocks rarely burn.

Exotic plant cover varies in this community from 0-24%; the primary invasive exotic plants are Brazilian pepper and caesarweed.

Impoundment/Artificial Pond – 3.5 acres, <1% coverage of TCP

This disturbed plant community includes water retention ponds, cattle ponds, and borrow pits. At TCP, there are 13 cattle ponds; most of which are in the western half of the Preserve.

Shrub Bog – 2.6 acres, <1% coverage of TCP

Shrub bog communities are characterized by dense stands of evergreen shrubs, vines and short trees. The soil is mucky and often covered with up to 12" of water. There may be some small patches of open water and there are few herbaceous plants. Typical plants at TCP in this community include wax myrtle, Carolina willow, laurel greenbriar (*Smilax laurifolia*) and Jamaica swamp sawgrass (*Cladium jamaicense*). They are typically found on the border of swamps and upland communities, in stream drainages and in flat, poorly drained areas between rivers. There are three small shrub bogs, all located near the north boundary of the Preserve. Two are associated with Stricklin Gully.

Wildlife found in this community at TCP includes green treefrogs, red-winged blackbirds (*Agelaius phoeniceus*) and common yellowthroats (*Geothylpis tristis*).

Natural shrub bogs will typically have fire burn into the edges from surrounding upland communities. During droughts fire may burn through the community. If the soils are dry enough, the fire may kill the shrubs, although the majority of the time the plants will resprout from the roots. Long durations of lack of fire in wet prairies and wet flatwoods can also result in those communities succeeding into a shrub bog.

Shrub Bog (Disturbed) – 1.9 acres, <1% coverage of TCP

There are two small shrub bogs that have thick Brazilian pepper in the understory.

Spoil Area –1.4 acres, <1% coverage of TCP

There are spoil piles located adjacent to each cattle pond at the Preserve. Many of them have a combination of native and exotic plants including Brazilian pepper, caesarweed, swamp fern (*Blechnum serrulatum*) and muscadine (*Vitis rotundifolia*).

Dome Swamp (Disturbed) – 1.2 acres, <1% coverage of TCP

Dome swamps are characterized as shallow, forested, usually circular depressions that generally present a domed profile because larger trees grow in the center and smaller trees grow on the periphery. Typical plants found in these communities at the Preserve include bald cypress, cabbage palm, myrsine and swamp fern. The two dome swamps at the Preserve are located in the northeastern corner, near the former cabin. Both are isolated and are becoming invaded with slash pines, probably due to shortened hydroperiods.

Wildlife documented in the dome swamps at TCP includes northern cardinals, blue-gray gnatcatchers and gray catbirds.

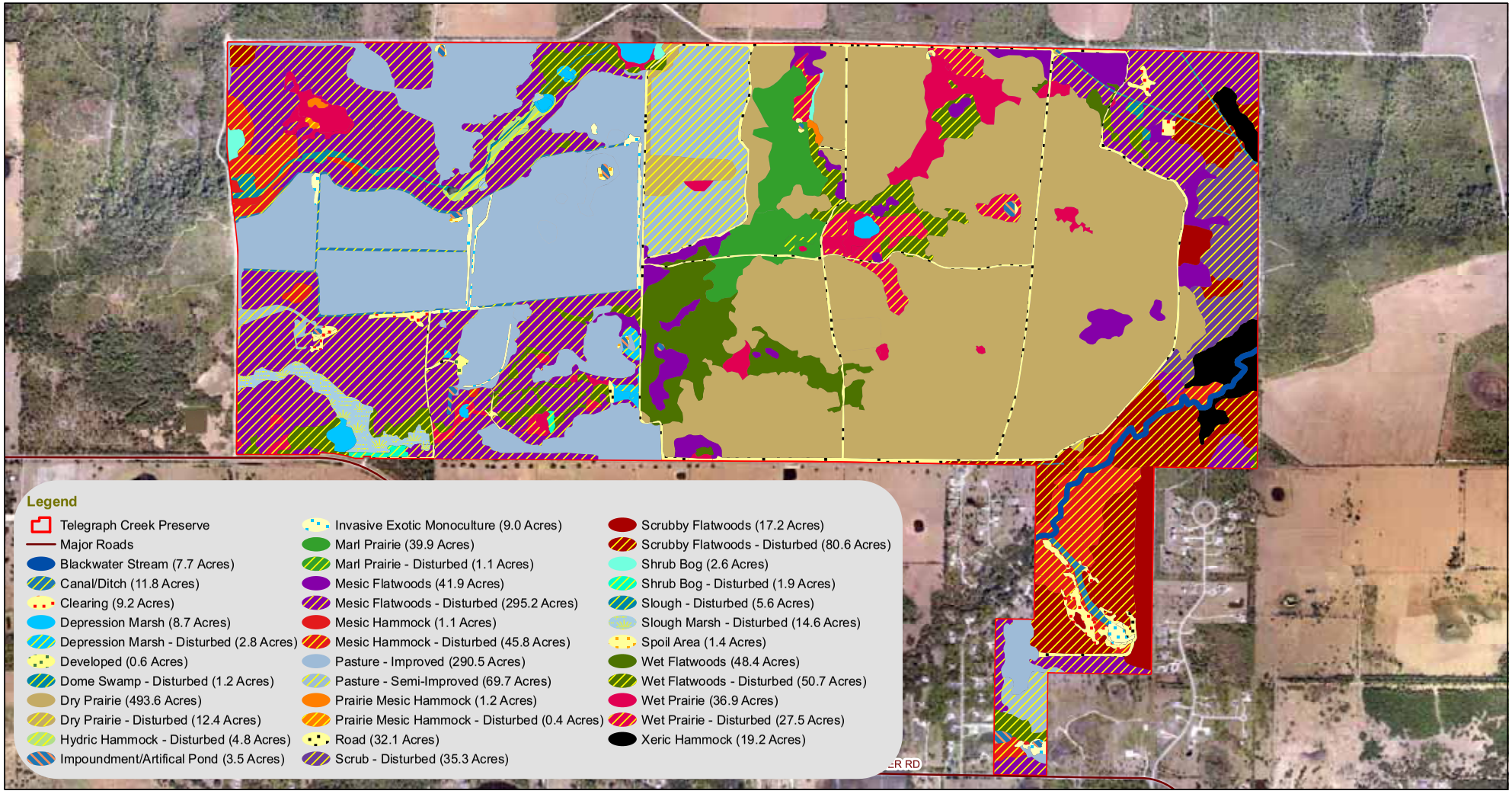
The typical hydroperiod for dome swamps is 180 to 270 days per year and fire is an important component for maintaining healthy species composition. Without fire, the dominant canopy can succeed to hardwoods. The fire frequency varies from 3-5 years on the edge and 100-150 years in the center.

There are some scattered exotic plants in this community including Brazilian pepper and caesarweed.

Developed – 0.6 acres, <1% coverage of TCP

The developed area at TCP is the former house site which still has a concrete pad and a small shed measuring 320 square feet.

Figure 9: Natural Plant Communities



iii. Fauna

TCP provides a variety of habitats for wildlife. The wide-range of plant communities supports the high diversity of fauna including numerous state and federally listed wildlife seen at the Preserve. Appendix B has the complete list of wildlife documented on the Preserve; as recorded through staff and volunteer field work and site inspections and environmental surveys contracted by past owners.

Bird species observed at this Preserve include; white-tailed kite (*Elanus leucurus*), black-and-white warbler (*Mniotilta varia*), yellow-bellied sapsucker (*Sphyrapicus varius*), blue-headed vireo (*Vireo solitarius*) and several herons. A variety of reptiles such as the Florida box turtle (*Terrapene carolina bauri*), American alligator and eastern diamondback rattlesnake have been observed along with several species of mammals including Florida panther, common gray fox (*Urocyon cinereoargenteus*) and marsh rabbit (*Sylvilagus palustris*).

Seven exotic wildlife species have been documented at the Preserve (Table 3). Of highest concern is the feral hog because of its ability to uproot native vegetation and disturb the natural landscape. Feral hogs have caused great damage to hundreds of acres of pasture and pose problems for the cattleman.

Currently, C20/20 does not have an on-going hog trapping program at the Preserve. As funds become available, trapping at TCP may become a routine maintenance activity. Additionally, staff will pursue other forms of hog control including organized and permitted hunts with quotas, hiring a hunter with a nuisance license and trapping with the option of shooting to deal with the large hog population that is causing incredible damage on the Preserve. Since "hunting" conflicts with Parks and Recreation's Ordinance 06-26, public meetings to change the ordinance and final approval by the Lee County Board of County Commissioners (BOCC) will be required.

Table 3: Exotic Wildlife at Telegraph Creek Preserve

Scientific Name	**Common Name**
Dasypus novemcinctus	nine-banded armadillo
Sus scrofa	feral hog
Anolis sagrei	brown anole
Hoplosternum littorale	brown hoplo
Boreioglycaspis melaleucae	melaleuca psyllid*
Oxyops vitiosa	melaleuca weevil*
Sturnus vulgaris	European starling

*beneficial bio-control insects

Stewardship at the Preserve will focus on providing optimal habitat for native wildlife species. Restoration of the disturbed areas, control of invasive exotic plants and animals and application of prescribed fire will be critical restoration

components to provide improved habitat for wildlife. The Florida scrub jay will be the primary focus of many of the restoration projects on portions of this Preserve. TCP is part of a countywide site inspection program for all C20/20 preserves. These inspections allow staff to monitor for any impacts and/or changes to each preserve and include lists of all animal sightings and new plant species that are found. If, during these inspections, staff finds FNAI listed species, they will be reported using the appropriate forms.

iv. Designated Species

There are a variety of designated animal (20) and plant (97) species (Table 4 & 5) found at TCP. Although all native plant and animal species found on the Preserve have some protection due to the preservation of this property, certain species need additional attention. For stewardship purposes, all plants and animals listed by the USFWS, FWC, Florida Department of Agriculture and Consumer Services (FDACS), the Institute for Regional Conservation (IRC) and FNAI will be given special consideration.

Typically, designated species will benefit from proper stewardship of the biological communities in which they occur. However, some species may require additional measures to ensure their protection. Practices likely to benefit wildlife and plants at the Preserve include exotic plant control, protecting and restoring water resources, prescribed fire, trash removal, wildlife monitoring, feral and exotic animal control, restricting construction of maintenance trails in certain areas and enforcement of no littering, no weapons (or 'unauthorized weapons,' if changes to the ordinance are made for hunting) and no motorized vehicles regulations.

Table 4: Listed Wildlife Species Found at TCP and Their Designated Status							
Scientific Name	**Common Name**	**USFWS**	**FWC**	**FNAI**	**FDACS**	**IRC**	**Occurrence**
BIRDS							
Ardea alba	great egret			G5/S4			confirmed
Egretta caerulea	little blue heron		SSC	G5/S4			confirmed
Egretta thula	snowy egret		SSC	G5/S3			confirmed
Egretta tricolor	tricolored heron		SSC	G5/S4			confirmed
Eudocimus albus	white ibis		SSC	G5/S4			confirmed
Plegadis falcinellus	glossy ibis			G5/S3			confirmed
Mycteria americana	wood stork	E	E	G4/S2			confirmed
Elanoides forficatus	swallow-tailed kite			G5/S2			confirmed
Elanus leucurus	White-tailed kite			G5/S1			confirmed
Aimophila aestivalis	Bachman's sparrow			G3/S3			confirmed
Accipiter cooperii	Cooper's hawk			G5/S3			confirmed
Haliaeetus leucocephalus	bald eagle	T	T	G4/S3			confirmed
Caracara cheriway	crested caracara	T	T	G5/S2			expected
Falco columbarius	merlin			G5/S2			confirmed
Grus canadensis pratensis	Florida sandhill crane		T	G5/T2T3/S2S3			confirmed
Picoides villosus	hairy woodpecker			G5/S3			confirmed
Aphelocoma coerulescens	Florida scrub-jay	T	T	G2/S2			confirmed
REPTILES							
Drymarchon couperi	eastern indigo snake	T	T	G3/S3			confirmed
Crotalus adamanteus	eastern diamondback rattlesnake			G4/S3			confirmed
Alligator mississippiensis	American alligator		SSC	G5-S4			confirmed
Gopherus polyphemus	gopher tortoise	T		G3/S3			confirmed
MAMMALS							
Puma concolor coryi	Florida panther	E	E	G5T1/S1			confirmed
Ursus americana floridanus	Florida black bear		T				expected

Table 5: Listed Plant Species Found at TCP and Their Designated Status						
Scientific Name	**Common Name**	**Status**	**EPPC**	**FDACS**	**IRC**	**FNAI**
Osmunda regalis	royal fern	native		CE	R	
Zephyranthes simpsonii	redmargin zephyrlily	native		T	I	G2G3/S2
Callisia ornata	Florida scrub roseling	native			I	
Commelina erecta	whitemouth dayflower	native			I	
Cyperus articulatus	jointed flatsedge	native			I	
Eleocharis baldwinii	roadgrass	native			R	
Fuirena pumila	dwarf umbrellasedge	native			I	
Fuirena scirpoidea	southern umbrellasedge	native			R	
Rhynchospora corniculata	shortbristle horned beaksedge	native			I	
Rhynchospora inundata	Narrowfruit horned beaksedge	native			R	
Rhynchospora fascicularis	fascicled beaksedge	native			R	
Rhynchospora nitens	shortbeak beaksedge	native			R	
Rhynchospora odorata	fragrant beaksedge	native			R	
Rhynchospora plumosa	plumed beaksedge	native			R	
Lachncaulon anceps	whitehead bogbutton	native			R	
Iris hexagona	dixie iris	native			I	
Sisyrinchium angustifolium	narrowleaf blue-eyed grass	native			R	
Juncus marginatus	shore rush	native			R	
Juncus megacephalus	bighead rush	native			R	
Juncus roemerianus	needlerush	native			R	
Spiranthes praecox	greenvein ladiestresses	native			CI	
Spiranthes vernalis	spring ladiestresses	native			R	
Amphicarpum muhlenbergianum	blue maidencane	native			R	
Andropogon glomeratus var. glaucopsis	purple bluestem	native			R	
Andropogon virginicus var. glaucus	chalky bluestem	native			R	
Andropogon virginicus var. virginicus	broomsedge bluestem	native			I	
Aristida spiciformis	bottlebrush threeawn	native			R	
Coelorachis rugosa	wrinkled jointtailgrass	native			R	

Table 5: Listed Plant Species Found at TCP and Their Designated Status						
Scientific Name	**Common Name**	**Status**	**EPPC**	**FDACS**	**IRC**	**FNAI**
Dichanthelium dichotomum	cypress witchgrass	native			R	
Dichanthelium ensifolium var. ensifolium	cypress witchgrass	native			I	
Digitaria filiformis var filiformis	slender crabgrass	native			I	
Eragrostis virginica	coastal lovegrass	native			I	
Panicum hians	gaping panicum	native			R	
Paspalum monostachyum	gulfdune paspalum	native			R	
Phragmities australis	common reed	native			R	
Tripsacum dactyloides	Fakahatcheegrass	native			R	
Smilax bona-nox	saw greenbriar	native			R	
Elytraria caroliniensis var. caroliniensis	Carolina scalystem	native			CI	
Justicia angusta	pineland waterwillow	native			R	
Ruellia caroliniensis	Carolina wild petunia	native			I	
Cicuta maculata	spotted water hemlock	native			I	
Eryngium baldwinii	Baldwin's eryngo	native			R	
Asclepias longifolia	longleaf milkweed	native			R	
Asclepias pedicellata	Savannah milkweed	native			I	
Hydrocotyle umbellata	manyflower marshpennywort	native			R	
Carphephorus corymbosus	Florida paintbrush	native			R	
Chaptalia tomentosa	pineland daisy	native			R	
Cirsium nuttallii	Nuttall's thistle	native			I	
Elephantopus elatus	tall elephantsfoot	native			R	
Helenium pinnatifidum	southeastern sneezeweed	native			R	
Lygodesmia aphylla	rose-rush	native			R	
Mikania cordifolia	Florida Keys hempvine	native			R	
Rudbeckia hirta	blackeyed susan	native			R	
Vernonia blodgettii	Florida ironweed	exotic			R	
Campsis radicans	trumpet creeper	native			CI	
Campanula floridana	Florida bellflower	native			I	
Lobelia feayana	bay lobelia	native			I	

Table 5: Listed Plant Species Found at TCP and Their Designated Status						
Scientific Name	**Common Name**	**Status**	**EPPC**	**FDACS**	**IRC**	**FNAI**
Stipulicida setacea	pineland scalypink	native			R	
Hypericum fasciculatum	peelbark St. John's-wort	native			R	
Hypericum mutilum	dwarf St. John's-wort	native			I	
Hypericum myrtifolium	myrtleleaf St. John's-wort	native			CI	
Hypericum reductum	Atlantic St. John's-wort	native			R	
Drosera capillaris	pink sundew	native			R	
Diospyros virginiana	common persimmon	native			R	
Stillingia sylvatica	queensdelight	native			R	
Bejaria racemosa	tarflower	native			R	
Ceratiola ericoides	Florida rosemary	native			R	
Vaccinium arboreum	sparkleberry	native			CI	
Galactia elliottii	Elliott's milkpea	native			R	
Quercus minima	dwarf live oak	native			R	
Sabatia brevifolia	shortleaf rosegentian	native			I	
Proserpinaca palustris	marsh mermaidweed	native			R	
Proserpinaca pectinata	combleaf mermaidweed	native			R	
Hydrolea corymbosa	skyflower	native			R	
Piloblephis rigida	wild pennyroyal	native			R	
Salvia lyrata	lyreleaf sage	native			CI	
Pinguicula pumila	small butterwort	native			R	
Linum medium	stiff yellow flax	native			R	
Mitreola sessilifolia	swamp hornpod	native			R	
Lythrum alatum	winged loosestrife	native			R	
Melochia spicata	bretonica peluda	native			I	
Fraxinus caroliniana	pop ash	native			R	
Polygala balduinii	Baldwin's milkwort	native			R	
Polygala boykinii	Boykin's milkwort	native			R	
Polygala incarnata	procession flower	native			R	
Polygala lutea	orange milkwort	native			I	

Table 5: Listed Plant Species Found at TCP and Their Designated Status						
Scientific Name	**Common Name**	**Status**	**EPPC**	**FDACS**	**IRC**	**FNAI**
Polygala nana	candyroot	native			R	
Polygala setacea	coastalplain milkwort	native			I	
Clematis baldwinii	pine-hyacinth	native			R	
Houstonia procumbens	innocence	native			R	
Sideroxylon reclinatum	Florida bully	native			R	
Gratiola hispida	rough hedgehyssop	native			I	
Linaria canadensis	Canada toadflax	native			R	
Lindernia grandiflora	Savannah false pimpernel	native			I	
Viola lanceolata	bog white violet	native			I	
Phoradendron leucarpum	oak mistletoe	native			CI	
Vitis shuttleworthii	calloose grape	native			R	

Key

USFWS - U.S. Fish and Wildlife Service

FWC - Florida Fish and Wildlife Conservation Commission

FDACS - Florida Department of Agriculture and Consumer Services

E – Endangered

T – Threatened

CE - Commercially Exploited

SSC - Species of Special Concern

IRC - The Institute for Regional Conservation

CI - Critically Imperiled

I – Imperiled

FNAI - Florida Natural Areas Inventory

G - Global rarity of the species

S - State rarity of the species

T - Subspecies of special population

1 - Critically imperiled

2 - Imperiled

3 - Rare, restricted or otherwise vulnerable to extinction

4 - Apparently secure

5 - Demonstrateably secure

Wildlife Species

The following is a brief summary of each designated wildlife species explaining why they are in decline. Unless stated otherwise, the reasons for the species decline and the management recommendations, if available, were obtained from Hipes et al. (2001).

Amphibians and Reptiles

American Alligator

American alligators have recovered dramatically since the 1960s. There are now some populations large enough to support limited harvests. Pollution and destruction of wetlands are currently the main threat to this species. Protecting wetlands from ditching, filling and pollution are the management recommendations for this species.

Gopher Tortoise

Gopher tortoises are in decline throughout their range due to loss and degradation of habitat. As a species dependant on dry, upland communities much of their habitat has been lost to urban and residential development, agriculture, citrus groves, mining and pine plantations. Additional threats include a highly contagious respiratory disease and human consumption.

Exotic plant removal, pine tree thinning, brush reduction, and prescribed burning will benefit this species. Before restoration activities that utilize heavy equipment take place, staff will conduct burrow surveys, where feasible, in areas where tortoise burrows could be present. Burrows will be flagged and equipment operators will be advised to stay away from the burrows. When possible, heavy equipment work will take place in the winter while gophers are more likely to be in their burrows.

Eastern Indigo Snake

The eastern indigo snake *(Drymarchon corais couperi)* is a large, iridescent black snake with a red, coral, or white throat (record length, 8.6 feet). This species is found in a large spectrum of communities throughout Florida and southern Georgia, often associated with gopher tortoise burrows. The Eastern indigo is threatened throughout its range due to habitat loss, degradation and fragmentation. Although it is now illegal to possess this animal without the proper permits, the pet trade is another cause for decline of this species. The most common causes of mortality are human caused, either by people afraid of snakes or accidental highway mortality. The indigo snake utilizes a home range of approximately 125-250 acres, and the males are territorial during the breeding season. The indigo snake feeds diurnally on fish, frogs, toads, lizards, snakes,

small turtles, birds, and small mammals, often around the edge of wetlands. The eastern indigo snake breeds from November through April, then lays 5-10 eggs in May or June (USFWS 1982).

Eastern indigo snake has been confirmed utilizing TCP by both staff and past wildlife surveys. Public education about the ecological value of this and other species of snakes will help to protect them from visitors to the Preserve and from adjacent landowners.

Eastern Diamondback Rattlesnake

Although not a listed species, the eastern diamondback rattlesnake is commonly thought to be in decline throughout its range. Scientists believe that it requires 10,000 acres or more to sustain long-term viable populations. Additional threats to this species include indiscriminate killing because of fear, as well as for trade and being hit by cars. Staff and previous wildlife surveys have noted the presence of this snake on the Preserve.

Great Egret, Little Blue Heron, Tricolored Heron, Snowy Egret

The little blue heron's (*Egretta caerulea*) and tricolored heron's (*Egretta tricolor*) decline are due to loss of freshwater wetlands and alteration of their natural hydroperiod. There is also some indication that pesticides and heavy metal contamination may affect this heron. Like these herons, the snowy egret is declining throughout its range, and has been since the 1950s. Scientists believe that the main reason for this decline is the loss and alteration of wetlands where they forage.

White Ibis, Glossy Ibis

Similar to the herons listed above, the white and glossy ibis (*Plegadis* falcinellus) are declining throughout their range, due to the same reasons as the other wading birds, which includes the reduction and degradation of wetlands and human disturbances to their rookeries.

Bachman's Sparrow

The Bachman's sparrow's *"*nests are grassy domes placed on or near the ground in a palmetto clump or dense shrub and lay 3-4 white eggs from early April through July" (Kale and Maehr 1990). Loss of habitat, predation (i.e. cats, raccoons), and forest management techniques are reasons listed for their decline. "Thinning of forest canopy and controlled burns can create suitable habitat for these birds. Thinning also provides more open habitat for a few years following timber harvest. Old-field habitat was once provided by abandoned farmland. Extensive ground disturbance during site management should be avoided" (MDC 2007).

Wood Stork

Wood storks are very sensitive to water levels in freshwater wetlands, as they require high concentrations of fish in fairly shallow water for foraging. Unnaturally high water levels during nesting seasons and extended droughts are both threats that wood storks face.

Florida Sandhill Crane

Florida sandhill cranes and the migratory greater sandhill crane are indistinguishable from each other. There have been crane sightings at the Preserve during the summer (April-September) when the migratory greater sandhill cranes are not present. Threats to Florida sandhill cranes include loss and degradation of wetlands, altered water levels during nesting season, fire suppression, free ranging dogs and cats, and entanglement in fencing (Rodgers et al. 1996).

Swallow-tailed Kite

Swallow-tailed kites (*Elanoides forficatus*) migrate to Southwest Florida from South America in late February/early March for their nesting season that lasts through late July/early September. In the early 1900s, swallow-tailed kites were confirmed as nested in 21 states, today they are only found in seven southeastern states. Loss of nesting sites through development and conversion to agriculture are the major threats to this species.

While this raptor has been spotted on the Preserve, it has not been confirmed as nesting at TCP. In the future if it is discovered that they are nesting on the property, the nest trees will be protected from disturbance during breeding season and planned management activities that could disturb the nesting pair(s) will be postponed.

White-tailed Kite

The white-tailed kite favors agricultural areas, grasslands, marshes or other open lands along the Gulf Coast. Their primary prey is small rodents, although they will occasionally feed on small birds, reptiles and amphibians. Conversion of agricultural/open lands for development, collisions with vehicles and ingestion of rodents poisoned with rodenticide are causing a decline in the population.

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*) numbers have steadily increased in Florida after a low of 120 active nests in 1973. Still, loss of habitat and human disturbance due to development is a primary concern for this species. Currently

there are no eagle nests on TCP but eagles have been seen perched in trees and have been observed flying over the Preserve during nesting season.

Cooper's Hawk

Cooper's hawk will "capture a bird with its feet and will squeeze it repeatedly to kill it. It does not bite the prey to kill it in the fashion of falcons, but holds it away from its body until it dies. It has been known to drown its prey, holding a bird under water until it stops moving" (CLOa 2003). During the summer, they breed across southern Canada southward to southern United States and into central Mexico. In the winter, they range throughout the United States and Mexico. They breed in deciduous, mixed, and coniferous forests, although documentation of breeding in south Florida is scant, and are becoming more common in suburban and urban areas.

"Declines of the Cooper's hawk in the late 1940s and 1950s were blamed on DDT and pesticide contamination. Populations started increasing in the late 1960s, but it is still listed as threatened or of special concern in a number of states. The Cooper's hawk appears to be adapting to breeding in urban areas, which may help increase populations" (CLOa 2003).

Crested Caracara

The crested caracara's range has contracted and become more fragmented because their habitat is threatened primarily by residential development and conversion to more intensive agricultural (e.g., citrus) uses. The crested caracara's large habitat requirements makes land acquisition and/or development of incentives (e.g., cooperative agreements, conservation easements, tax breaks) for private landowners to maintain their ranch lands for their long-term security an important task. This species is frequently spotted along North River Road and has been seen once in one of the Preserve's pastures by C20/20 staff.

Merlin

Merlins "winter in open woodland, grasslands, open cultivated fields, marshes, estuaries, and seacoasts. " In Florida, merlin's are considered non-breeding residents (CLOb 2003).

Florida Scrub-jay

The Florida scrub jay is endemic to Florida and is in decline throughout its range due to loss and degradation of habitat. This species is dependent upon oak species for a large portion of their diet. Additional threats include feral/free roaming cats and land alterations that affect more than 1/3 of an established territory of a jay family. Regular burning, mechanical reduction of palmetto, and

annual monitoring will be important components of managing for scrub jays on TCP.

While staff has not noted the presence of this species during their trips onsite, scrub jays do have a documented history of using this Preserve. The most recent reported sighting of scrub jays was in 2003.

Hairy Woodpecker

The hairy woodpecker (*Picoides villosus*) is a "resident from central Alaska to Newfoundland, southward to Florida and Central America, but can also be found in the Bahamas." They are "found in mature woods, small woodlots, wooded parks, and residential areas with large trees." Hairy woodpeckers build their nest in cavities of trees or a dead branchs and do not put additional materials in the cavity. They are considered "common and widespread, but may be declining in some areas. The hairy woodpecker is attracted to the heavy blows a pileated woodpecker makes when it is excavating a tree. The hairy woodpecker forages in close association with the larger woodpecker, pecking in the deep excavations and taking insects that the pileated missed" (CLOc 2003).

Mammals

Florida Panther

The Florida panther is extirpated from most of its historic range in the southeastern United States, but exists in small populations in south Florida. The Florida panther's decline is due mainly to loss, fragmentation, and degradation of habitat. Other habitat related threats include inbreeding, insufficient numbers of large prey, disease, and mercury and other environmental contaminants. Institutional constraints and negative public perceptions also threaten the future survival of the Florida panther. The large cats require extensive areas of mostly forested communities. Large wetlands that are generally inaccessible to humans are important for diurnal refuge. They will tolerate improved areas in a mosaic of natural communities. The presence of Florida panthers has been confirmed by a hired environmental consultant's observations in recent years at TCP. Figure 10 shows that TCP has adjacent properties that are listed as priority panther habitat.

Florida Black Bear

The Florida black bear *(Ursus americanus floridanus)* is in decline due to the loss of core habitat and of corridors capable of handling their large ranges. A wide variety of forested communities are needed to support the varied seasonal diet of black bears. Forested wetlands are particularly important for diurnal cover.

The Florida black bear faces numerous challenges including poaching, road kill mortality, low reproductive rate and most importantly loss of habitat to timber

harvesting, development and other uses. “Long-term conservation of the Florida black bear is dependent upon preservation of large contiguous woodlands.” Scientists with FWC have found the average home range for female black bears is almost 7,000 acres and males average over 42,000 acres (Humphrey 1992).

Although staff has not confirmed the Florida black bear, its presence is expected due to the size of the Preserve, the mosaic of suitable habitat and the position in a preservation corridor north into Charlotte County. There has been a confirmed black bear sighting at Caloosahatchee Regional Park (CRP) which is located about one mile east of TCP. The Preserve will also serve as a safe travel corridor for black bears throughout a larger conservation area. Scientists have found that large scale winter burning reduces the diversity of food available to bears as compared to growing season burns (Humphrey 1992). Prescribed burns conducted in the late spring would not only be beneficial to bears, but also to several other species listed above.

Plants

In addition to designated wildlife, TCP provides habitat for several listed plant species listed by the IRC and two species that are listed by FDACS. The following is a brief summary of the FDACS designated plant species explaining why they are in decline, typical habitats where they are located and management recommendations.

Royal Fern

Royal fern (*Osmunda regalis var. spectabilis*) is listed as Commercially Exploited by FDACS. This plant is distributed throughout Florida and can be found in wet flatwoods, basin swamp and dome swamp communities of the Preserve.

Redmargin Zephyrlily

Redmargin zephyrlily (Zephyranthes simpsonii) grows naturally in low pine flatwoods and savannas and at margins of wet hammocks. It also is adapted to pastures developed from such areas and to moist mowed roadsides. The main limiting factor appears to be competition from other plants and habitat destruction.

The majority of the designated plant species (Table 5) were provided by IRC, which is not a regulatory agency. IRC’s designation was either obtained from their book Rare Plants of South Florida: Their History, Conservation and Restoration , (Gann 2002) or Internet website (http://www.regionalconservation.org/ircs/database/search/QuickSearch.asp).

Scientists working for this Institute have conducted a tremendous amount of field work and research documenting plants occurring in conservation areas in the 10

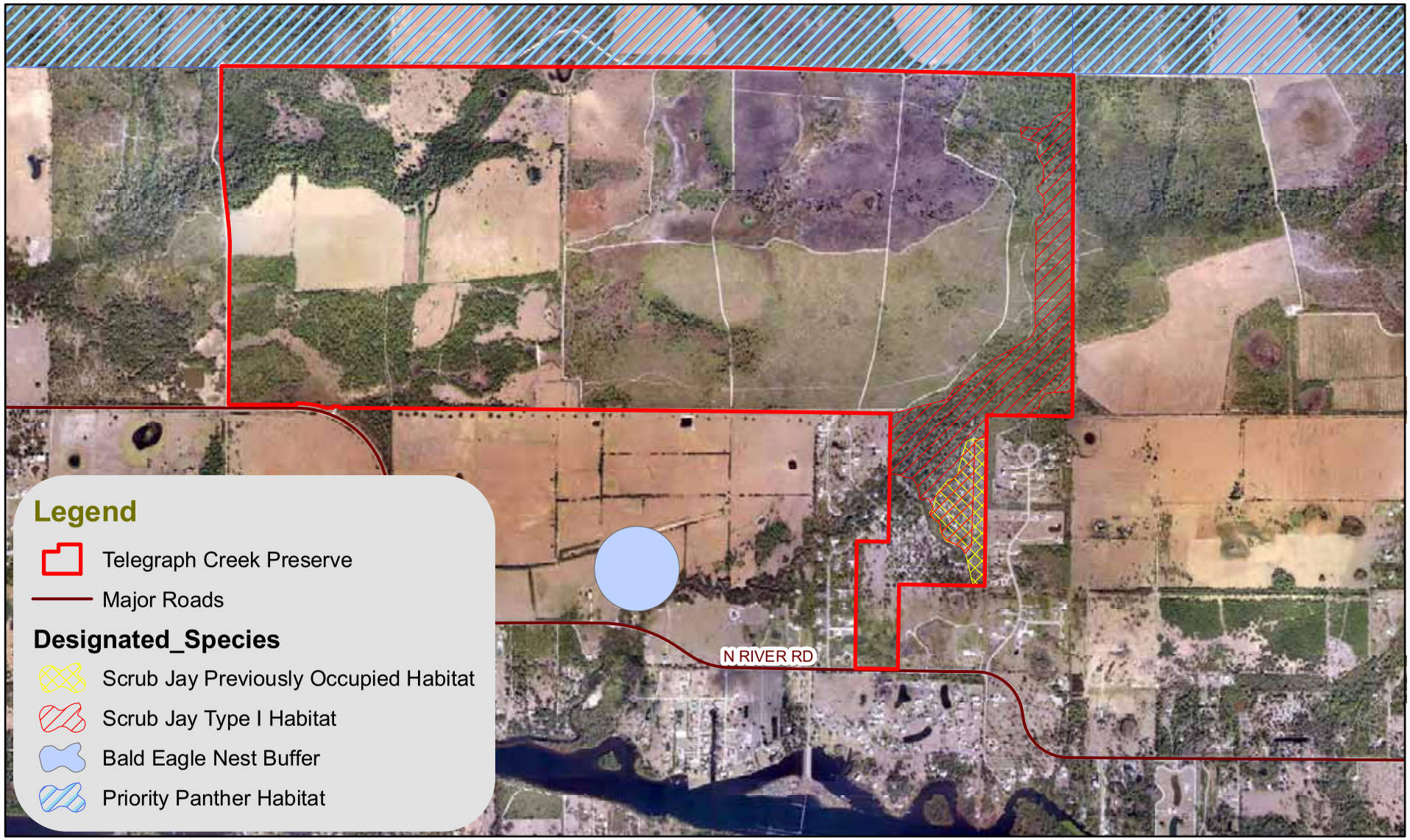
southernmost counties of Florida. This initial floristic inventory allowed the IRC to rank plant species to indicate how rare/common these plants are in protected areas. At TCP, a number of Rare, Imperiled, and Critically Imperiled plants occur. Rare plants are defined as being either very rare and local throughout its range in south Florida (21-100 occurrences, or less than 10,000 individuals), or found locally in a restricted range. IRC only ranks those taxa as rare with fewer than 100,000 individuals. Imperiled plants are those that are imperiled in south Florida because of rarity (6-20 occurrences, or less than 3,000 individuals) or because of vulnerability to extinction due to some natural or human factor. IRC only ranks those taxa as imperiled that have fewer than 10,000 individuals.

Critically Imperiled plants are defined as being either extreme rarity (5 or fewer occurrences, or fewer than 1,000 individuals), or because of extreme vulnerability to extinction due to some natural or human factor. IRC only ranks those taxa as critically imperiled with 10,000 or fewer individuals. In their book, (Gann 2002), the authors provide an entire chapter of recommendations to help restore south Florida's rare plant diversity. Several of these recommendations, particularly those that protect plants on the Preserve and relate to stewardship practices, will be followed. More information on the specifics techniques used will be discussed in the Management Action Plan. The following list highlights those recommendations by IRC that will be incorporated into the management of TCP:

- Prohibit recreational activities such as off-road vehicle use to avoid impacts to rare plant populations.
- Prevent illegal poaching of rare plants.
- Prosecute poachers to the fullest extent of the law.
- Implement an ongoing exotic pest plant control program.
- Educate exotic plant control crews about the rare plants to ensure they avoid non-target damage.
- Trap or kill wild hogs, which can completely destroy the above ground vegetation and disturb all the soil in an area where they are feeding.
- Initiate prescribed fire in communities that are fire adapted since fire as a management tool is extremely critical for the protection of many rare plants.
- Divide the site so the entire area is not burned during the same year will also help protect these communities.
- Ensure that management activities do not negatively impact rare plant populations.

If additional listed species are documented on the Preserve, they will be added to the lists in Appendices A or B.

Figure 10: Designated Species Map



v. Biological Diversity

The plant communities at TCP range from dry scrub, to seasonally wet prairies and flatwoods to deeper wetlands including Telegraph Creek. Much of the land is disturbed to some extent from previous agricultural uses, preliminary work for a development and lack of fire. It is likely that biodiversity levels will increase after stewardship activities have been put into practice (i.e. invasive exotic plant removal, tree thinning, fuel reduction, brush reduction and prescribed fire).

The connection to BJP and BRP provides greater opportunity for mammals, such as the Florida black bear and Florida panther with home ranges larger than the TCP. At least one Florida panther was documented using the Preserve by environmental consultants in 2006 and there are occasional reports of both rare species at BRP.

Another listed species that was documented at the Preserve before it was purchased by Lee County was the Florida scrub jay. The Florida scrub jay is present in Lee County in very limited numbers. Many historically documented territories no longer exist, mainly due to development and lack of proper management of land that was once occupied by jays. Due to their scarcity in Lee County, C20/20 staff will focus efforts on portions TCP to improve habitat specifically for the jay. These efforts, in turn, will benefit a wide variety of other species. Florida scrub jays are present within 3-4 miles of the Preserve and natural dispersal from these populations could result in jays returning to suitable areas of TCP.

The extensive dry prairie at TCP is unique for any current C20/20 acquisition. There are several rare bird species that prefer this open habitat: Florida grasshopper sparrow (*Ammodramus savannarum floridanus*), Florida burrowing owl (*Athene cunicularia floridana*), crested caracara, white-tailed kite and Florida sandhill crane (FNAI 2010). Of these, only the grasshopper sparrow has not been documented at the Preserve.

The seasonally wet areas of TCP provide conditions conducive to amphibian reproduction. Oak toads, eastern narrowmouth toads (*Gastrophryne carolinensis*), barking (*Hyla gratiosa*) and squirrel treefrogs spend more time in surrounding uplands, utilizing the wetlands strictly for breeding (Jensen 2003). Additionally, barking treefrogs and oak toads breed almost exclusively in seasonal wetlands. Because of the short hydroperiod, larger predatory fish like Florida largemouth bass (*Micropterus salmoides floridanus*) and bluegill (*Lepomis macrochirus*) are unable to become established and feed on the developing tadpoles. As these temporary wetlands slowly dry, the fish, tadpoles and aquatic invertebrates become quite concentrated, providing an excellent food source for the water birds that utilize the Preserve.

Many species of animals not only inhabit, but also frequently visit the Preserve. Currently 258 plant species (29 exotic) and 121 animal species (5 exotic) have been documented at the Preserve. Fifteen of the 29 exotic plant species (52%) are on the Florida Exotic Pest Plant Council (FLEPPC) 2009 List of Invasive Plant Species (FLEPPC 2009).

The integrity and diversity of TCP must be protected when and where possible. C20/20 staff will perform the following actions in this regard:

- Implement a prescribed fire program to closely mimic the natural fire regimes for different plant communities to increase plant diversity and ensure the canopies remain open.
- Control of invasive exotic vegetation followed by annual maintenance to provide more suitable habitat for native aquatic and terrestrial species.
- Maintain boundaries with fencing and signs to eliminate illegal access to the Preserve and protect fragile ecosystems.
- Temporary closure of flooded trails to prevent soil disturbance and avoid plant damage.
- Aggressively pursue control methods for feral hogs, which have caused extensive damage in the hammocks and pastures of the Preserve.
- Reduce canopy cover in appropriate communities to promote herbaceous plant diversity.
- Where necessary, install perimeter fire breaks to protect resources on the Preserve and surrounding neighbors in the event of wildfires.
- Remove any debris and prevent future dumping on-site.
- Control invasive exotic animal populations to reduce their impacts on the herbaceous plants, native animals and soils.
- Conduct on-going species surveys utilizing volunteers and staff to catalog and monitor the diversity that is present.
- Use adaptive management if monitoring of restoration techniques indicates a change may be necessary.
- Offer public access that allows citizens to enjoy the preserve while protecting sensitive plant communities.
- Enhance hydrologic conditions to return to historic hydroperiods.

C. Cultural Resources

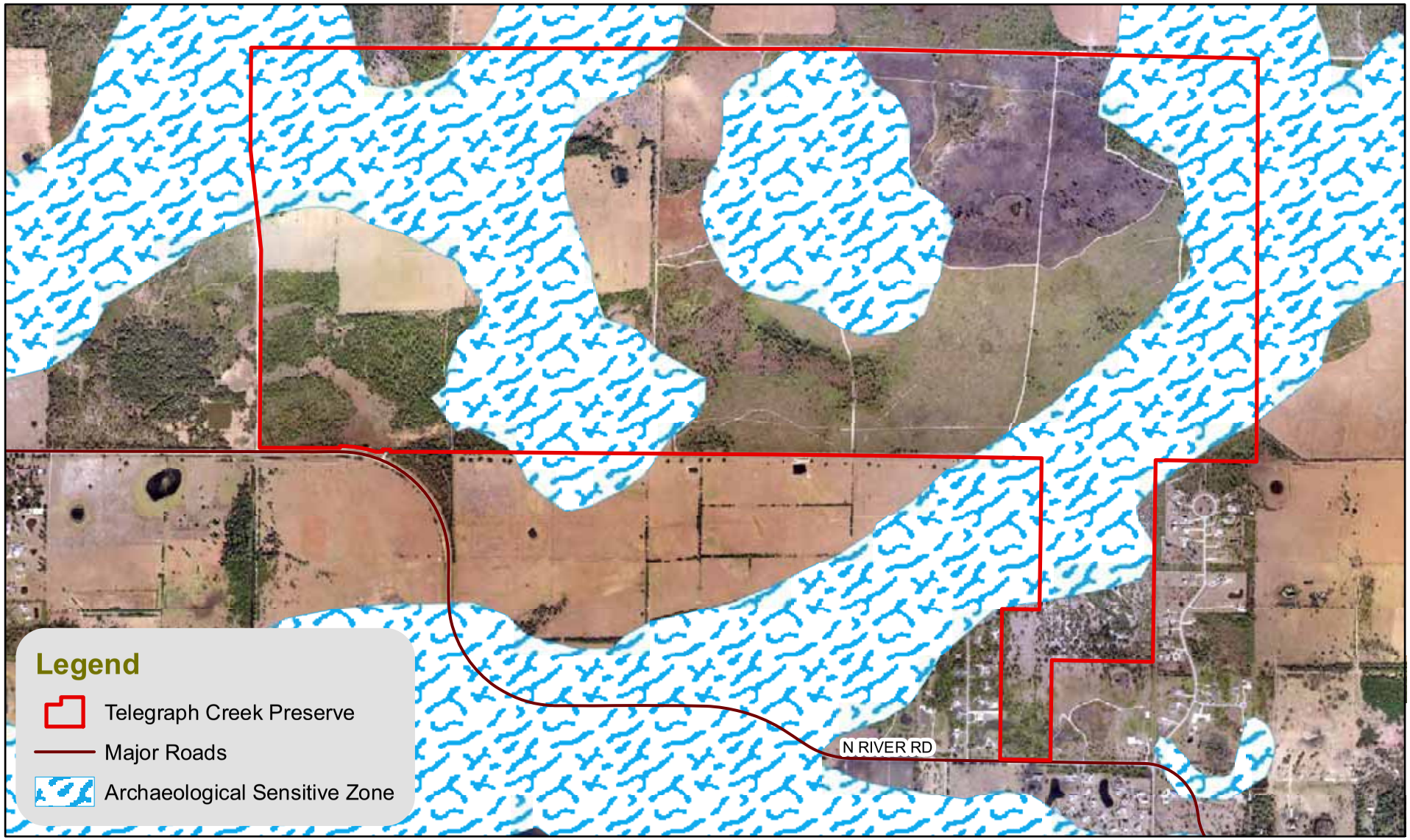
i. Archaeological Features

In 1987, Piper Archaeological Research, Inc. conducted an archaeological site inventory of Lee County. They were able to identify 53 sites, increasing the total number of known archaeological sites in Lee County to 204. They also created a site predictive model and archaeological sensitivity map for the county that highlighted areas likely to contain additional archaeological sites. Portions of TCP are located within an area designated as archaeological sensitivity level 2 (Figure 11). The study defines this level as "areas that contain known archaeological sites that have not been assessed for significance and/or conform to the site predictive model in such a way that there is a high likelihood that unrecorded sites of potential significance are present. If these areas are to be impacted by development activities, then they should be subjected to a cultural resource assessment survey by a qualified professional archaeologist in order to determine the presence of any archaeological sites in the impact area and/or assess the significance of these sites" (Austin 1987).

The previous land owners (Benderson Development) hired Archaeological Consultants, Inc. to conduct a cultural resource survey on Argo Ranch in 2005. They conducted extensive records research as well as field surveys that included over 200 shovel tests. They determined that the proposed development would not impact any significant cultural resources and no further archaeological or historical work was recommended.

If evidence of artifacts are found in the area during restoration activities, staff will follow the Division of Historical Resources (DHR) "Best Management Practices: An Owner's Guide to Protecting Archeological Sites" (http://www.flheritage.com/archeology/education/culturalmgmt/Handbook.pdf) and immediately DHR will be contacted. Staff will also work with DHR to designate the Preserve as a State Archeological Landmark Zone under Section 267.11. This would extend protection of the site and allow for protection procedures under the provision of Chapter 267, Florida Statutes, Sections 267.061 2(a) and (b). Collection of artifacts and/or any disturbance of the archaeological site will be prohibited unless prior authorization has been obtained from the Department of State, DHR. The site will be managed in coordination with recommendations of the DHR and, if necessary, the site will be kept confidential with periodic monitoring for impacts. If any significant archaeological resources are found and confidentiality is not found to be necessary, they will be incorporated into a public educational program.

Figure 11: Archaeological Resources Map



ii. Land Use History

Although not all elements of the land use history discussed below occurred across TCP, modifications made on portions of a Preserve or adjacent properties can directly influence the Preserve. C2020 staff has created maps for each historical aerial available; however only a few representative ones are placed in this Land Stewardship Plan (LSP).

In the 1870's the area surrounding the preserve was surveyed and a fenceline associated with a cow pen and a telegraph line were noted as being located on what is now TCP (ACI 2005). Telegraph Creek was named for the Inter-Ocean Telegraph's cables that ran through the area and across the creek and the Preserve. This telegraph line was the only communication between the United States and Cuba during the Spanish-American War of 1898 (Weant 1992).

According to interpretations based on aerial photography dating back to 1944 (Figure 12), land uses included agricultural activities such as grazing, alterations for a proposed development, and digging of cow wells. The 1944 aerial photograph shows a very different picture of the Preserve with several easily identifiable wetland areas and scattered trees with minimal signs of human impact other than a dug Y-shaped ditch in the northeast corner, a possible section line road on the western side, and a prominent Jeep trail running diagonally on the eastern half. None of these features were identified in the 1870's survey. Tree coverage is very low and Stricklin Gully is easily identified in the northwestern corner. Portions of the former alignment of North River Road are present.

The 1952 aerial showed a new trail along the center of the south boundary and clearing of land adjacent to the southern boundary outside of the Preserve. The 1953 map (Figure 13) shows more small scale clearing on adjacent properties and a few more jeep trails. The tree canopy over Telegraph Creek and Stricklin Gully is minimal.

The 1958 aerial (Figure 14) shows drastic changes to the arm of TCP. An artificial tributary of Telegraph Creek for future residential development has been excavated and unpaved roads have been constructed (RMA 2009). Two natural marshes were incorporated into this tributary, one of which is the head of the tributary and the other subsequentially becomes too altered to be discernable in future aerials. A series of marshes on the southern end of the arm were altered through the excavation of a large pond on the western boundary of the arm. A smaller pond was excavated directly east of this larger pond. The soil berms around these artificial ponds and the tributary provided ideal conditions for Brazilian pepper to become established in later years. The land south of Telegraph Creek was additionally altered by clearing and soil disturbance related to earth moving site preparation work for the development that was never built.

From the late nineteenth century until the 1960s, intense logging of slash pine virtually eliminated all virgin stands of the southern mixed forest in south Florida. These activities likely reduced slash pine densities throughout the Preserve and explain the lack of old growth pine trees found on the site. The stumps from the previously logged slash pines were removed from many properties in the region during the 1950s and 1970s. This activity, referred to as “stumping”, was conducted to extract turpentine from the wood. Stumping created depressions in the soil, which in turn created a microhabitat where soil moisture is higher for longer periods than adjacent habitats, allowing different plant species to occur. There were small, isolated pockets on the 1966 aerial which could be interpreted as logging areas. A few stump holes were encountered during C20/20 staff’s intensive site inspections during field work for this plan.

The 1972 aerial showed three watering holes excavated in the large pasture. The 1975 aerial (Figure 15) shows the first large scale natural community alteration with the clearing of the present day pastures located on the western half of TCP. The slough marsh in the southwestern corner of TCP appears to be cut off from the other natural wetlands and some clearing along its edges has occurred. Many new trails on the eastern side of the Preserve are well defined on the aerial. During field work, C20/20 staff determined these trails were potentially created to drain water from the prairie into Telegraph Creek. The trail parallel to the north shoreline of Telegraph Creek has been created, and trails associated with cattle operations and the private residence have been cleared south of the new pasture. A cow well has been excavated on the north property line north of the pasture.

By 1986 (Figure 16), trees across TCP are maturing and canopy cover has greatly increased, most notably along Telegraph Creek, the “Y” ditch in the northeast corner, and Stricklin Gully. The marshes are showing encroachment of woody vegetation. Several new trails have been created on the east side, presumably associated with hunting. Two cow wells were dug on private property adjacent to the south property line and several inside the Preserve as well. The present day agricultural fields on the Babcock lands to the north have not yet been cleared. Cattleman Fred Lewis provided information on a square of cleared land along the south boundary, midway across the Preserve. This was set up as a dove field as part of the hunting lease established by the Bakers.

Between 1986 and 2010 little changed on TCP. Woody vegetation continued to encroach around the marshes, Brazilian pepper thrived on the disturbed soils associated with former earth moving and tributary excavation, as well as along fencelines and ditches. The scrub areas became overgrown with mature oaks due to lack of fire.

Tom and Donna Baker owned the land, known as the Argo Ranch, from 1969 until 2004. During their ownership, a residence, a storage shed and a cabin were constructed, as well as tree stands related to hunting leases. They nominated

the property to the C20/20 program in 2003 but could not agree on a price and withdrew their nomination.

In 2004, Benderson Development purchased the Argo Ranch and planned a single-family residential development consisting of large estate and equestrian lots. No land clearing or other land alterations were conducted, and in February 2009 the BOCC took ownership through the C20/20 Program.

In August 2005, winds from Hurricane Wilma caused damage to the house and cabin. Due to the cost estimates for repair of the buildings, they were demolished by the development company as part of the sales agreement with the County.

C20/20 staff conducted an interview with cattleman Fred Lewis on September 2, 2010. He has grazed cattle on this land for twenty years and knows the site well. He told us that shortly after the Baker's took ownership, they began cattle grazing at a head count of 150-200. The Baker's also installed the majority of the firelines and trails which still exist today.

Mr. Lewis also explained that the initial clearing of the pasture areas was done through leasing of acreage for initial crops that were grown for two years, then the fields would be planted in grass for pasture. This was a common practice in the 1970s before fungicides and other chemicals increased productivity of row crops and allowed farmers to continually keep the same piece of land in production. Fred Lewis cleared and planted the pasture area east of the eastern interior fence, in what the previous owners referred to as "the woods".

Mr. Lewis recalled the Baker's had leased two areas to be set up as dove fields, and there were some people that had a lease on "the woods" for hunting for several years. The dove fields were cleared, and slick wire and PVC pipe were set around one, but they were never used.

Fred Lewis conducted winter burns a quarter at a time in the dry prairie, and occasionally rollerchopped palmetto and other woody vegetation in the pasture areas until the land was purchased by Benderson Development. Mr. Lewis has occasionally cleaned out some of the cow wells but never dug any new ones, nor has he maintained any of the ditches.

Figure 12: 1944 Historical Aerial

Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

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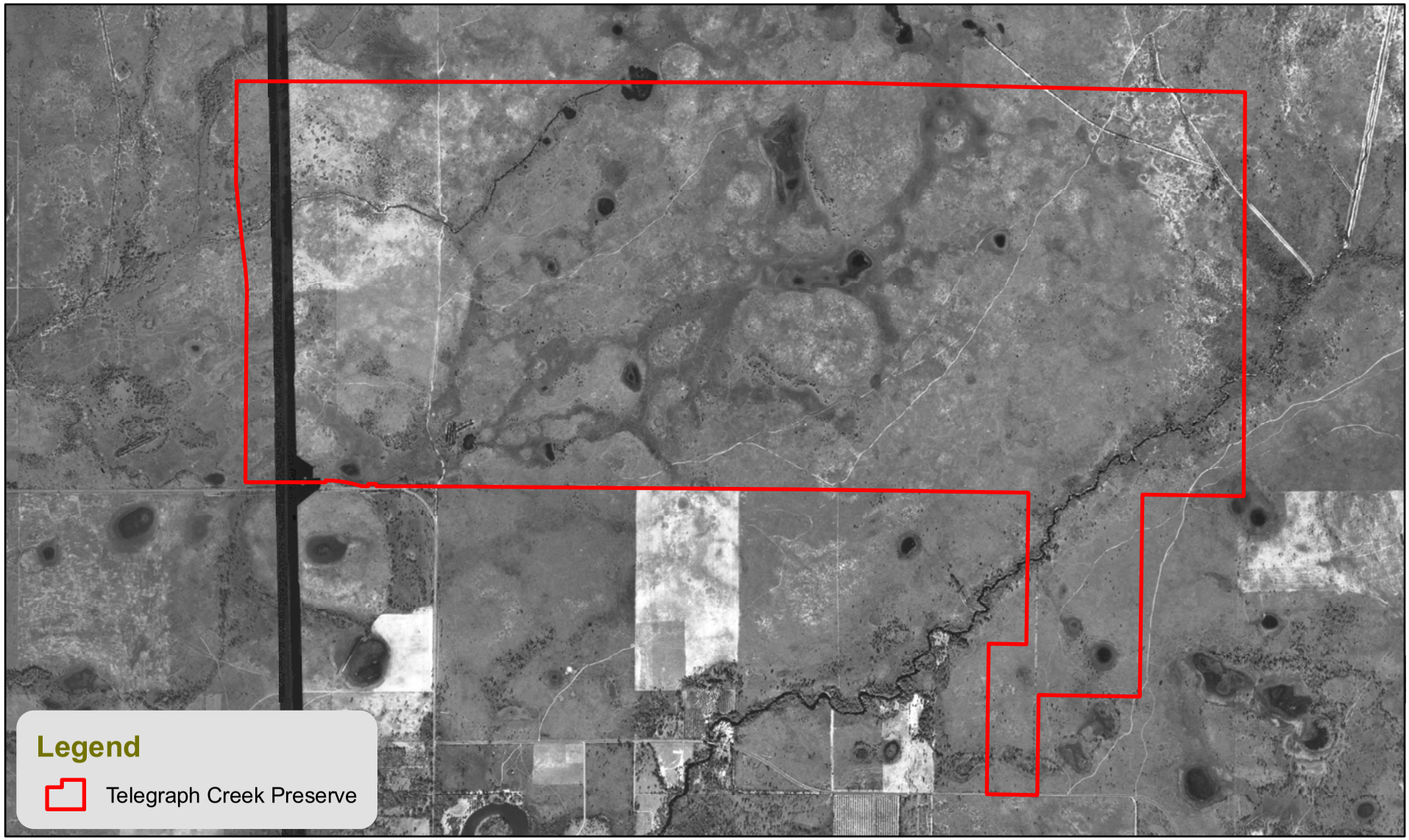
C2020\Telegraph_Creek_Preserve\1944.mxd
Map Prepared On: 7/27/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 13: 1953 Historical Aerial



Telegraph Creek Preserve

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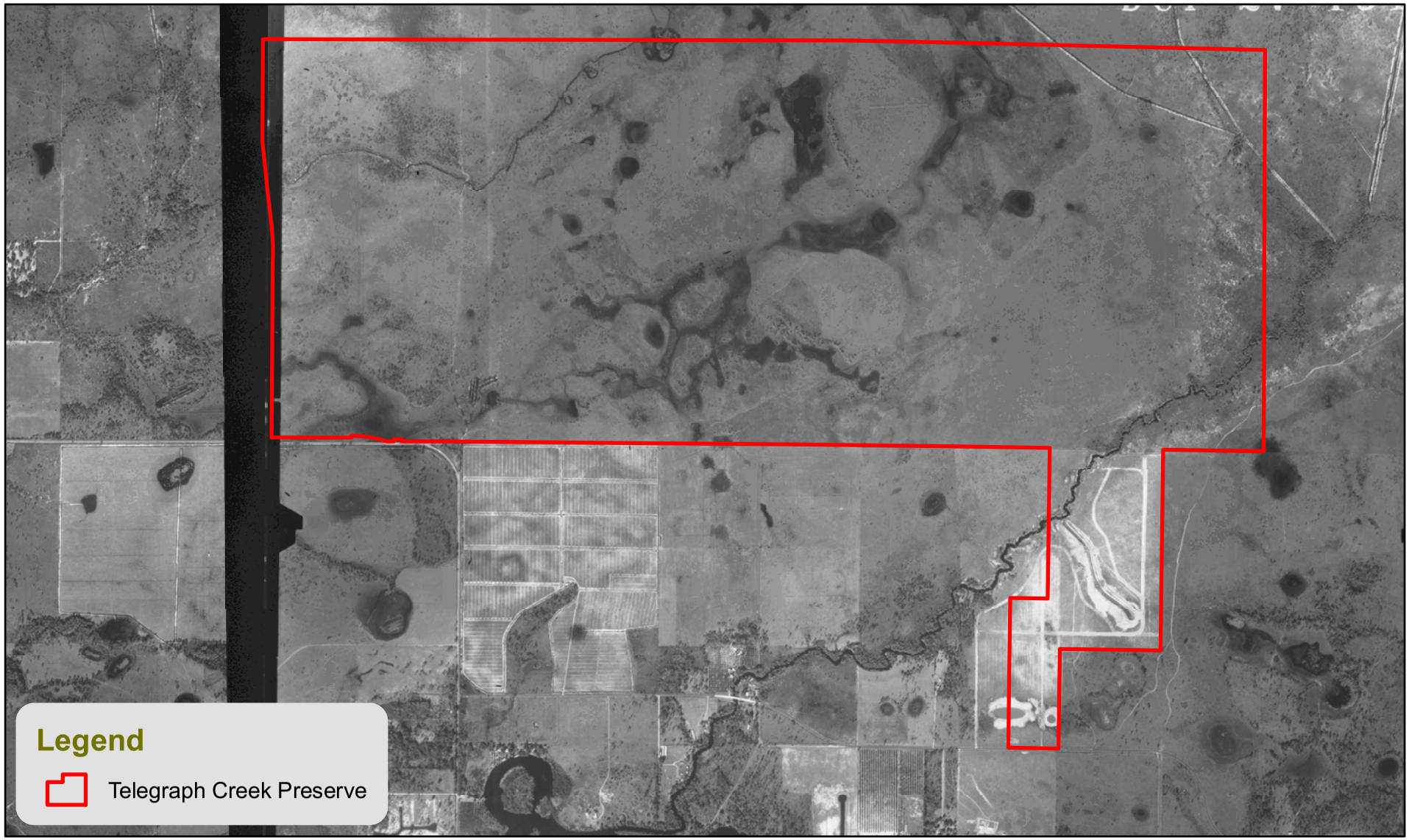
C2020\Telegraph_Creek_Preserve\1953.mxd
Map Prepared On: 7/29/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 14: 1958 Historical Aerial



Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

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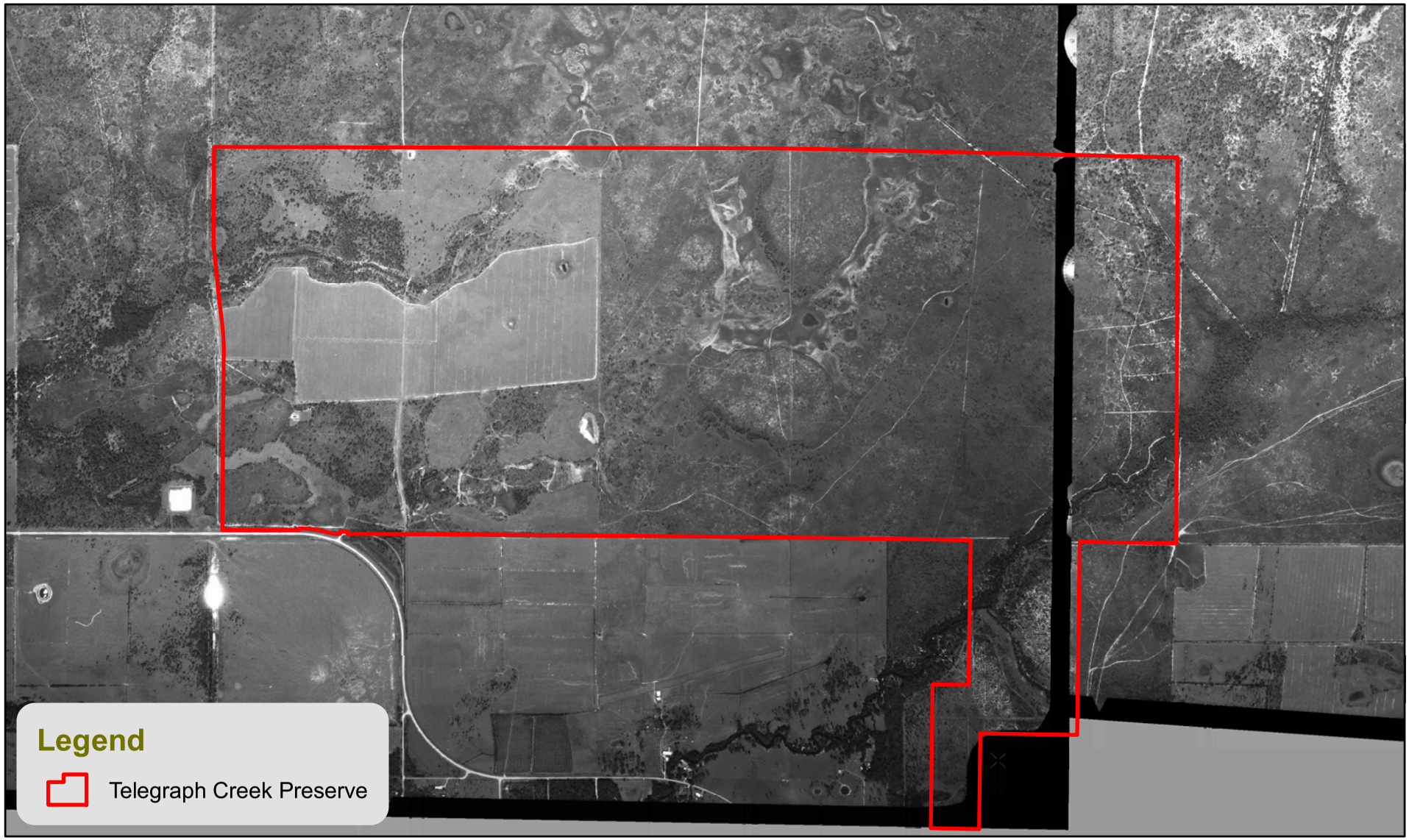
Map Prepared On: 7/27/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 15: 1975 Historical Aerial



Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

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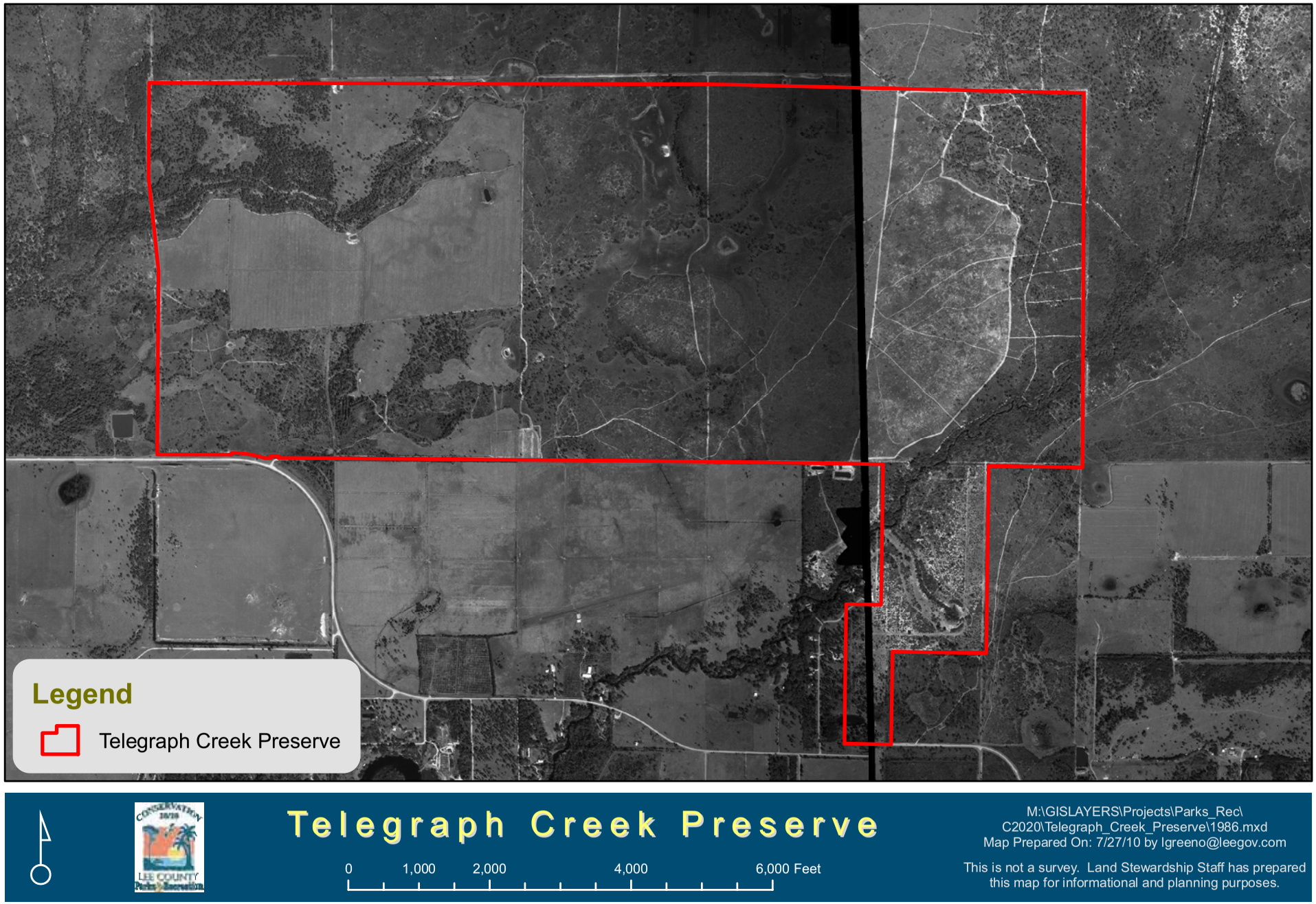
Map Prepared On: 7/29/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 16: 1986 Historical Aerial



iii. Public Interest

TCP was purchased for the preservation of environmentally sensitive lands, its high probability for listed species and for additional protection of water quality in Telegraph Creek. Staff has received several requests from the public for access into the Preserve and opportunities have been explored during the field work for the writing of this LSP. Staff has led two group requested tours, and offered a special hike open to the general public for National Trails Day. TCP is the only legal access point from Lee County onto the Bob Janes Preserve, therefore public requests for access onto BJP will directly impact TCP.

An attempt in 2010 to create a North Olga Community Plan (NOCP) was not successful, but citizen involvement did demonstrate the importance of TCP in providing green space and recreational opportunities for future development that may come to this part of the county, as well as the need for staff to be involved in planning of developments so that future land management techniques are not hindered. Planners involved in the NOCP identified the limited access onto TCP as a problem for future recreational opportunities and expressed the idea of several agencies pooling funding to purchase disturbed land adjacent to TCP to provide a parking area. C20/20 staff will work within established legal parameters with any proposals brought forward for additional land being incorporated into TCP to provide improved public access in the future.

Publicly available information concerning this and all C20/20 preserves can be found on the web site along with copies of their associated stewardship plans when available (www.conservation2020.org). In the winters of 2009 and 2010, a letter providing information on upcoming prescribed burning was sent to neighbors of the Preserve. Information on the work associated with the FWC gopher tortoise habitat improvement grant was also sent to neighbors in April of 2010. After the mailing, staff received requests for updates from a few citizens, and they will be updated with future restoration news as it occurs. Staff may mail additional newsletters when activities are scheduled to take place that the Preserve neighbors may be interested in.

V. FACTORS INFLUENCING MANAGEMENT

A. Natural Trends and Disturbances

Natural trends and disturbances influencing native communities and stewardship at TCP include hurricanes, flooding, wildfires, occasional freezes, and the pattern of wet and dry seasons. Implementation of the Management Action Plan will take all of these factors and their influence on projects at TCP into consideration. For example, a tropical storm or hurricane could damage large amounts of vegetation, as could a wildfire. It may be necessary to remove or mulch downed vegetation following a hurricane if the debris increases the chance of negative impacts to wildlife habitat or public safety from a wildfire.

Construction of trails and trailheads will need to take the possibility of a tropical storm, wildfires and seasonal flooding into consideration. A significant storm could damage the vegetation and it may be necessary to bring in heavy equipment to remove vegetation from trails and fence lines after a storm before cattle escape from the property.

Wildfires caused by lightning strikes are natural occurrences in Florida. The Florida Division of Forestry (FDOF) – Caloosahatchee District - and LCPR staff have developed a wildland firefighting protocol for County preserves. This agreement between FDOF and the county should help to minimize impacts to the Preserve from the utilization of bulldozers, plows, and other emergency firefighting equipment creating dozer lines to stop the fires. A Fire Management Plan has been completed for Lee County owned conservation lands to help decrease the impact of catastrophic wildfires on the preserves and neighboring lands. The FDOF has received a copy of this plan and will continue to receive updated maps of newly acquired parcels showing the locations of gates, firebreaks, management units, and water sources. C20/20 staff will lead periodic site visits for FDOF staff in order to familiarize them with TCP and current management efforts. Fire lines on both the perimeter of the Preserve and within the Preserve will be kept clear of debris and disked or mowed a minimum of once a year during the onset of the dry (wildfire) season.

Stewardship (invasive exotic plant control, prescribed burning, etc.) of TCP is influenced by seasonal flooding. The Land Stewardship Operations Manual's (LSOM) exotic plant prescription form will be used to define the conditions for control activities. Care shall be taken to prevent herbicide from running off during a typical summer thunderstorm so as not to affect non-target plants. Only herbicides approved for aquatic application will be used for treatment of vegetation in standing water or where flooding may occur. The use of heavy equipment will be limited to the dry season for the majority of the site. The timing of prescribed burns will also be influenced by seasonal rain, weather, wind patterns and wildlife needs.

B. Internal Influences

Several anthropogenic activities have impacted TCP. Many of these influences can be attributed to historic agricultural operations (farming and cattle), recreational activities, a failed expansion of a residential development and typical single-family uses. See Figure 17 for approximate location of some of these features.

Earthen modifications include ditches, berms, borrow pits, cow wells, small lakes, and a canal that were dug for agricultural drainage, cattle watering holes and a failed development. Septic systems, potable wells, irrigation wells, test water wells, utility lines and pipes, concrete pads, asphalt and fill material have been

used to create roads and infrastructure for residential housing and agricultural farming. Many of these alterations adversely influence the water flow on the site by both interrupting sheet flow and holding water for extended periods in some areas while excessively draining other areas. In addition, interior trails from cattle or hunting activities and old FDOF plow lines continue to redirect water from the natural flow ways. There are also shallow ditches on the eastern side of the palmetto prairie that appear to have been installed for drainage. One of these ditches has washed out a deep channel and sinkhole that leads to Telegraph Creek.

Two irrigation pipes remain in the abandoned agricultural fields that are now grazed by cattle. In 1998, three 4" diameter test wells were installed by Lee County Utilities (LCU) to a 170' depth along the north boundary in a Sandstone aquifer study. Although these were subsequently capped, the irrigation pipes were not. During the environmental site assessment, two potable wells near the homestead and hunting cabin could not be located, although the septic tanks were properly disposed of by a licensed contractor. The cattleman has been given permission to keep tanker trucks containing liquid fertilizer, spray rigs and other equipment temporarily on-site.

There are several locations with minor amounts of debris. Some larger items include broken farm equipment, hunting stands, heavy steel girders (cattleman will remove), abandoned pens and traps, household items, and discarded cattle and/or planted plot fencing. Unnecessary fencing, feeders, and pens from cattle operations will be removed once the lease is terminated or before restoration work begins. Areas containing abandoned or unused items can become hazardous for stewardship activities such as prescribed burning, brush reduction, and exotic plant removal with heavy equipment. These items will be removed by staff during special volunteer or staff workdays. The Lee County Solid Waste Division may be able to assist staff with trash removal efforts, if the site is accessible.

Exotic animals can have a detrimental effect on native species and landscapes. For example, feral hogs consume ground-nesting bird eggs and disturb soil and sensitive vegetation during rooting activities, which can provide optimal substrate for invasive exotic plant growth. Extensive feral hog damage has occurred within neighbors' yards, oak hammocks, improved pasture and has been noted surrounding the trunks of many south Florida slash pines as they quench their desire for the sugar stored within their roots. Exotic snails, fish and amphibians can outcompete native fauna for habitat and food. A range of removal methods will be used for problematic invasive exotic animals found on the Preserve, and intense measures such as hunting should be considered.

An intrusive level of man-made activities has permitted aggressive invasive exotic plant species to thrive and further disrupt native plant communities.

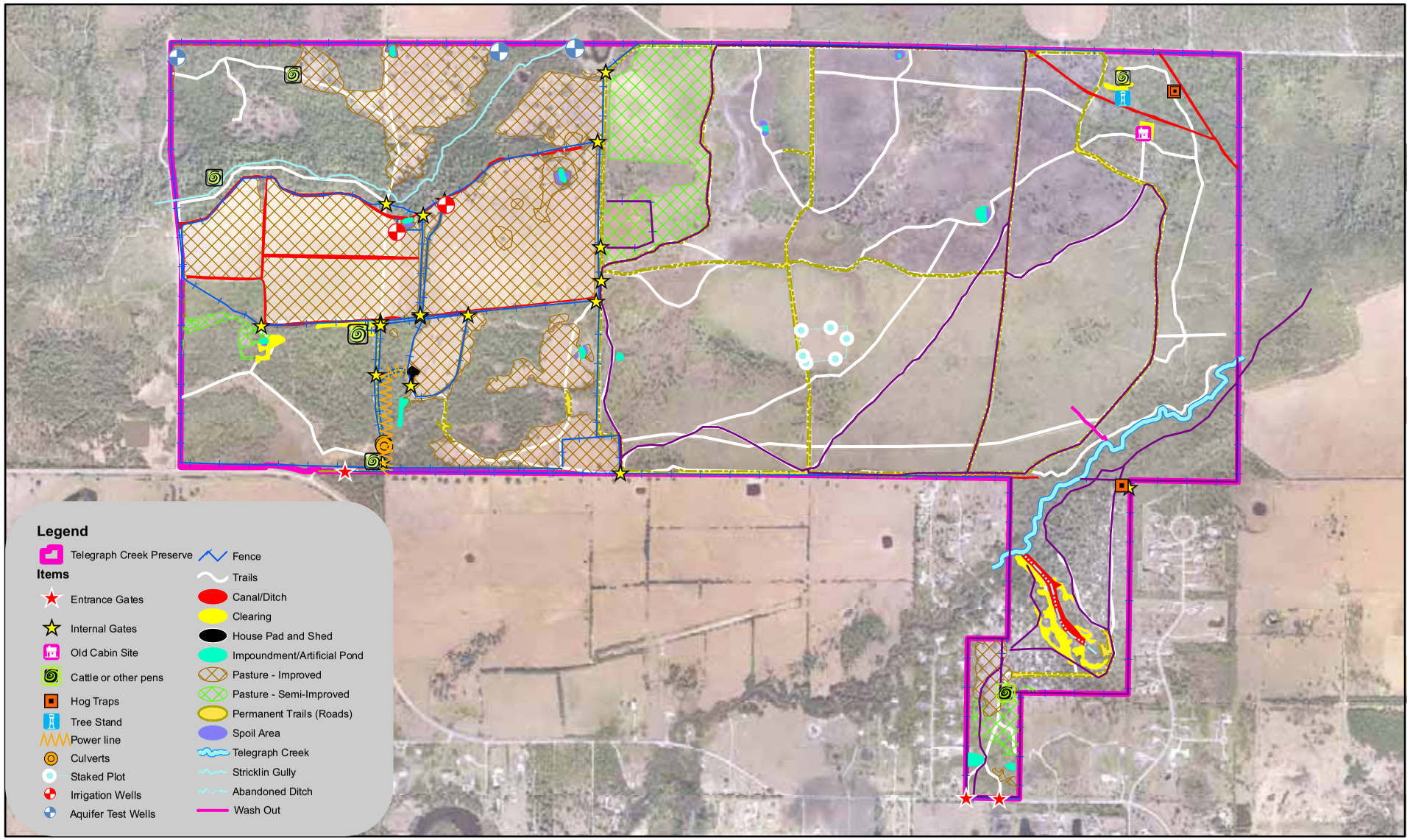
Removal of invasive exotic plant species such as downy rose-myrtle and Brazilian pepper is an important part of the restoration of conservation lands.

Prior to C20/20's purchase of Parcel 236-2, limpograss (*Hemarthria altissima*) was planted on approximately 9 acres. This grass was baled and sold as hay, and has since been listed as a FLEPPC Category II invasive exotic. This grass has spread from the initial planting site and has invaded adjacent plant communities.

On Parcel 236-2, the long-term cattleman has performed prescribed burns within some dry prairie and pasture areas. Since C20/20 acquisition, staff has initiated burning these fire managed areas. Several other upland communities are severely overgrown due to previous fire suppression activities. Old FDOF plow lines were noted at several locations and within different communities; although no fire history has been established.

Absence of fire within areas of the Preserve has had noticeable impact on the natural fire dependant communities. In several areas, pine flatwoods have become mixed with hardwoods and other non-fire tolerant species. Also, palmetto has flourished to the extent of overshadowing other understory shrubbery and herbaceous vegetation. Within some areas of pine flatwoods, lack of fire has allowed smaller pines to become predominant and increased slash pine density to an unhealthly level. Some of the hydric communities are experiencing encroachment from wax myrtles and other shrubs. Vegetation reduction measures will be implemented to reestablish healthier pine flatwoods and hydric communities and to reintroduce a fire regime. A prescribed fire management program will be implemented in all management units that contain fire dependent communities. This will aid conservation measures by inhibiting exotic plant regrowth and return an essential fire regime for fire dependent plants and animals for long-term sustainability. Implementing an appropriate fire regime within the landscape will help prevent the sometimes devastating effects of wildfires and possibly avoid the need for FDOF to intervene with bulldozers and plows.

Figure 17: Internal Influences Map



Telegraph Creek Preserve

0 0.25 0.5 1 Miles

M:\GISLAYERS\Projects\Parks_Rec\C2020\Telegraph_Creek_Preserve\TCP_LSP_2010\TCP_Internal_Influences.mxd
Map Prepared On: 08/04/10 by sfurnari@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

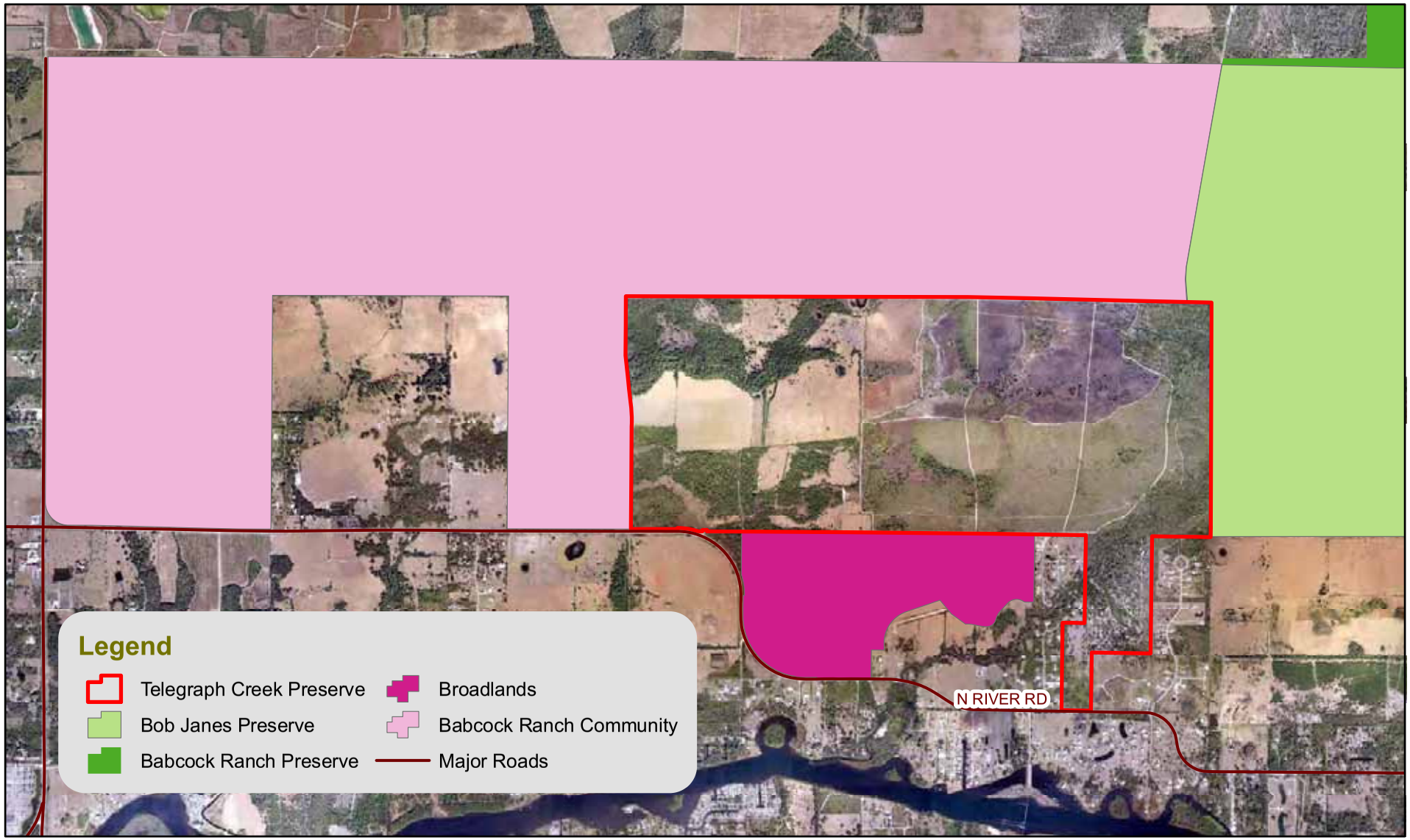
C. External Influences

There are a variety of external influences that affect TCP (Figure 18). The Preserve is located in the Alva Planning Community (APC) designated by the Lee County Board of County Commissioners (BOCC) and discussed in the Lee Plan (LCDCD 2009). The mission of this planning community is to "Preserve and protect its unique historical, rural, agricultural and small town flavor." Alva is the oldest settlement in Lee County and its residents seek to maintain its rural character. TCP will support the goals of the APC by continuing cattle ranching in some portions of the Preserve for the present and allowing enjoyment through a primitive trail system without building extensive amenities.

The Preserve's proximity to BRP, including Lee County's BJP, (cumulatively over 73,200 acres) is a positive external influence and provides additional habitat, foraging, and nesting opportunities for many plant and animal species including state listed Florida black bears as well as federally endangered Florida panthers and federally threatened Florida scrub jays. There are also opportunities to partner on restoration projects as well as the ability to coordinate public use. One example of this is the primitive trailhead that is proposed on TCP that will provide hiking access to BJP.

On the other hand, land directly adjacent to the majority of the Preserve is either developed with single family homes, has approval for development or there are potential plans for future development. To the south of TCP is the "Broadlands", which has been approved for the construction of infrastructure for a 283-lot single-family subdivision. The 4,157-acres adjacent to the north and west boundaries is part of the Babcock Ranch Community. At this time, the application to rezone the property from AG-2 to MPD and will include duplex, townhomes, retail and commercial space has been withdrawn. Increased growth will likely bring potential issues of illegal horticultural waste dumping, increased trash and demand for greater access to the site. With the encroachment of development, conducting ecological prescribed burns will become more of a challenge. Even with these challenges, it is critical that the stewardship of this Preserve includes efforts to reduce fuel loads, establish and maintain firelines and conduct prescribed burns to minimize the risk of having a wildfire endanger the surrounding areas. At the same time, these stewardship activities will help protect the Preserve's natural resources from being destroyed by a wildfire.

Figure 18: External Influences Map



D. Legal Obligations and Constraints

i. Permitting

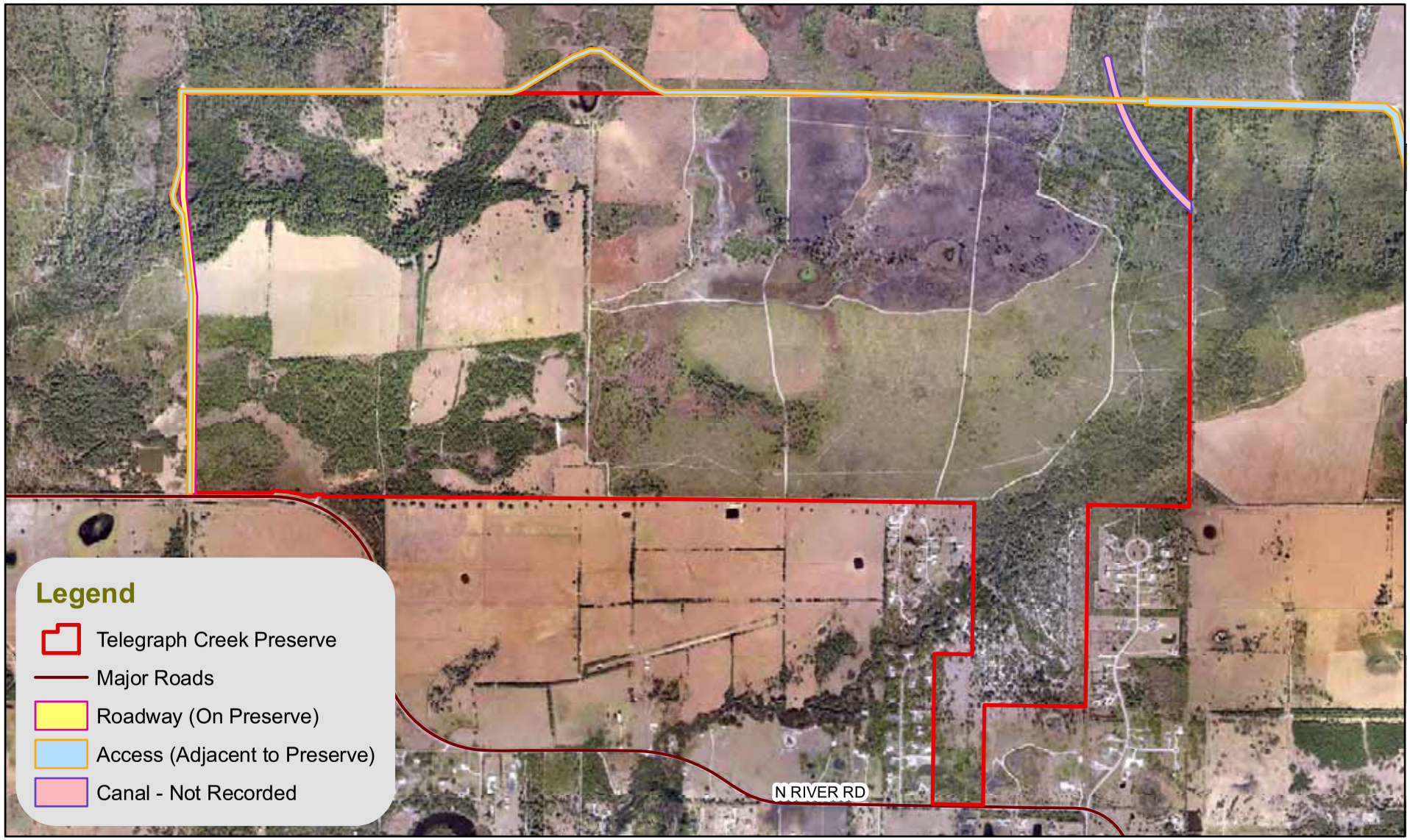
Land stewardship activities at TCP may involve obtaining permits from regulatory agencies. Any proposed hydrologic improvements to the site may require obtaining permits from the Florida Department of Environmental Protection (FDEP), the U.S. Army Corps of Engineers (USACOE) and SFWMD. Hydrological and/or habitat restoration projects requiring heavy equipment or tree removal will require notification to the LCDCD. Burn authorization from the FDOF is required for all prescribed burns conducted on TCP. The proposed primitive trailheads will require limited development permits from the Lee County Department of Community Development to install culverts and, if necessary, bring in fill. In 2010, C20/20 hired Johnson Engineering, Inc. to permit a culvert that will allow hikers access to BJP.

ii. Other Legal Constraints

At this time there is an active cattle lease on TCP (Appendix C) which eventually will be terminated. As a consideration of the License for Cattle Grazing, this lease may be terminated with a 30-day written notice to the Licensee or canceled upon 48 hours verbal notice if cattle are not kept within the confines of the leased area. The lease is on a one year term and expires during the month of September. Cattle are a beneficial management tool to assist with brush management. C20/20 staff has found that removing cattle before restoration activities take place often leads to a rapid invasion of shrubs and weedy species leading to increased costs for future pasture restoration. In addition, the cattlemen that hold the lease are responsible for maintaining the fencelines and are an extra set of eyes to watch for possible problems on the Preserve.

There are three easements on or directly adjacent to the Preserve (Figure 19). The first is an access easement to BJP. This easement is granted by Babcock Property Holdings to Lee County and is adjacent to the west and north boundaries of the Preserve. Lee County Division of County Lands is currently researching if this easement would allow for access into TCP as for stewardship activities such as prescribed burning and fuel reduction. There is a 40-foot roadway easement within the Preserve boundary along the western side (DB 279 – Pg 68 and DB 308 – Pg 530) which was created on deeds recorded in 1957 and 1959. There is a possibility that someone could claim rights to use this easement for roadway purposes, but they would need to provide Lee County documentation that they have legal rights to use the land for a roadway. There are no plans for any trails or other improvements on this boundary, and staff would recommend keeping this easement in mind with any possible development. The final easement, seen on the survey, is located on the northeast corner of the Preserve. Based on the Owner's Title Policy and survey there is no recorded easement for this canal.

Figure 19: Easements Map



iii. Relationship to Other Plans

Due to the proximity of TCP to BRP in Charlotte County and BJP in Lee County, C20/20 staff will refer to the FWC conceptual management plan for possible joint projects with FWC in the stewardship of the Preserve. If a future management agreement is completed between C20/20 and FWC, and hunting activities are organized by FWC, a county ordinance amendment will need to occur before hunting is allowed on county lands.

As of 2006, BJP is being managed by Babcock Ranch LLC, a private corporation, for the first 5-10 years (2011-2016 with another five year option). Afterwards, BJP will be managed by the Babcock Ranch Inc., a not-for-profit corporation established by the Babcock Ranch Preserve Act. C20/20 staff will coordinate with these entities concerning various stewardship activities and future public access.

The Lee Plan, Lee County's comprehensive plan, is written to depict Lee County as it will appear in the year 2020. Several themes have been identified as having "great importance as Lee County approaches the planning horizon" (LCDCD 2010). These themes are:

- The growth patterns of the county will continue to be dictated by the Future Land Use map.
- The continued protection of the county's natural resource base.
- The diversification of the county's traditional economic base.
- The expansion of cultural, educational and recreational opportunities.
- A significant expansion in the county's physical and social infrastructure.

The entire Lee Plan can be found on the Internet at: http://www3.leegov.com/dcd/Leeplan/Leeplan.pdf. The four chapters that affect the management of TCP are **Chapter II – Future Land Use, Chapter IV – Community Facilities and Services, Chapter V – Parks, Recreation and Open Space,** and **Chapter VII – Conservation and Coastal Management.**

Chapter II, Policy 1.4.6 states that Conservation Lands includes uplands and wetlands that are owned and used for long range conservation purposes. Upland and wetland conservation lands will be shown as separate categories on the FLUM. Upland conservation lands will be subject to the provisions of this policy. Wetland conservation lands will be subject to the provisions of both the Wetlands category described in Objective 1.5 and the Conservation Lands category described in this policy. The most stringent provisions of either category will apply to wetland conservation lands. Conservation lands will include all public lands required to be used for conservation purposes by some type of legal mechanism such as statutory requirements, funding and/or grant

conditions, and mitigation preserve areas required for land development approvals. Conservation Lands may include such uses as wildlife preserves; wetland and upland mitigation areas and banks; natural resource based parks; ancillary uses for environmental research and education, historic and cultural preservation, and natural resource based parks (such as signage, parking facilities, caretaker quarters, interpretive kiosks, research centers, and quarters and other associated support services); and water conservation lands such as aquifer recharge areas, flow ways, flood prone areas, and well fields. 2020 lands designated as conservation are also subject to more stringent use provisions of the 2020 Program or the 2020 ordinances. (Added by Ordinance No. 98-09, Amended by Ordinance No. 02-02).

Chapter IV, Policy 59.1.6 provides that the county will, through appropriate regulations, continue to provide standards for construction of artificial drainage ways compatible with natural flow ways and otherwise provide for the reduction of the risk of flood damage to new development. (Amended by Ordinance No. 94-30, 00-22)**.**

Chapter IV, Policy 60.1.4 provides that the county will examine steps necessary to restore principal flow-way systems, if feasible, to assure the continued environmental function, value, and use of natural surface water flow-ways and associated wetland systems. (Amended by Ordinance No. 00-22).

Chapter V provides that Land Stewardship staff will ensure that any public use facilities and recreational opportunities will comply with **Goal 85: PARK PLANNING AND DESIGN**, which requires that parks and recreation sites are planned, designed, and constructed to comply with the best professional standards of design, landscaping, planning, and environmental concern. Under **Policy 85.1.2** staff will be providing a connector trail to BJP through a hiking trail on TCP and will be open to providing other recreational access if appropriate in the future. Staff will also work to meet **Goal 86: ENVIRONMENTAL AND HISTORICAL PROGRAMS, Objective 86.1** to provide information and education programs regarding its cultural history and its environment at appropriate facilities. (Amended by Ordinance No. 94-30, 00-22).

Chapter VII, Objective 104.1: ENVIRONMENTALLY CRITICAL AREAS provides that within the coastal planning area, the county will manage and regulate, on an ongoing basis, environmentally critical areas to conserve and enhance their natural functions. Environmentally critical areas include wetlands (as defined in Goal 114) and Rare and Unique upland habitats. Rare and Unique upland habitats include, but are not limited to: sand scrub (320); coastal scrub (322); those pine flatwoods (411) which can be categorized as "mature" due to the absence of severe impacts caused by logging, drainage, and exotic infestation; slash pine/midstory oak (412); tropical hardwood (426); live oak hammock (427); and cabbage palm hammock (428). The numbered references are to the FLUCFCS Level III (FDOT, 1985). (See also Policy 113.1.4.) The

digitization of the 1989 baseline coastal vegetation mapping (including wetlands and rare and unique uplands, as defined above) will be completed by 1996. (Amended by Ordinance No. 94-30, 00-22).

Chapter VII, Goal 107: RESOURCE PROTECTION provides to manage the county's wetland and upland ecosystems so as to maintain and enhance native habitats, floral and faunal species diversity, water quality, and natural surface water characteristics. **Objective 107.1: RESOURCE MANAGEMENT PLAN** provides the county will continue to implement a resource management program that ensures the long-term protection and enhancement of the natural upland and wetland habitats through the retention of interconnected, functioning, and maintainable hydroecological systems where the remaining wetlands and uplands function as a productive unit resembling the original landscape. (Amended by Ordinance No. 94-30, 00-22) Under **Policy 107.1.1.4e** the county (or other appropriate agency) will prepare a management plan for each acquired site for the long-term maintenance and enhancement of its health and environmental integrity.

Chapter VII, Objective 107.2: PLANT COMMUNITIES. Lee County will maintain and routinely update an inventory of natural plant communities and will protect at various suitable locations remnant tracts of all important and representative natural plant communities occurring within Lee County. (Amended by Ordinance No. 94-30).

Chapter VII, Objective 107.3: WILDLIFE provides the county will maintain and enhance the fish and wildlife diversity and distribution within Lee County for the benefit of a balanced ecological system. (Amended by Ordinance No. 94-30) **Policy 107.3.1:** encourages upland preservation in and around preserved wetlands to provide habitat diversity, enhance edge effect, and promote wildlife conservation. Initiating a prescribed fire regime and removing invasive exotics will follow this policy.

Chapter VII, Objective 107.4: ENDANGERED AND THREATENED SPECIES IN GENERAL provides Lee County will continue to protect habitats of endangered and threatened species and species of special concern in order to maintain or enhance existing population numbers and distributions of listed species. **Policy 107.4.1** states to identify, inventory, and protect flora and fauna indicated as endangered, threatened, or species of special concern in the "Official Lists of Endangered and Potentially Endangered Fauna and Flora of Florida," FWC, as periodically updated. Lee County's Protected Species regulations will be enforced to protect habitat of those listed species found in Lee County that are vulnerable to development.

Chapter VII, Objective 107.8: GOPHER TORTOISES provides that the county will protect gopher tortoises through the enforcement of the protected species regulations and by operating and maintaining, in coordination with the FWC, the

Hickey's Creek Mitigation Park. (Amended by Ordinance No. 94-30) **Policy 107.8.1** provides that the county policy is to protect gopher tortoise burrows wherever they are found. However, if unavoidable conflicts make on-site protection infeasible, then off-site relocation may be provided in accordance with FWC requirements. (Amended by Ordinance No. 94-30).

Chapter VII, Objective 107.10, Policies 107.10.1 and 107.10.2 WOOD STORK provides that Land Stewardship staff will continue to document wood stork utilization of the Preserve and ensure that the TCP management plan follows United States Fish and Wildlife Service's (USFWS) "Habitat Management Guidelines for the Wood Stork in the Southeast Region." (U.S Fish and Wildlife Service, 1990). (Amended by Ordinance No. 94-30, 00-22).

Chapter VII, Objective 107.11, Polices 107.11.1, 107.11.4, and **107.11.6: FLORIDA PANTHER AND BLACK BEAR.** Provides that C20/20 staff will maintain and update data on sightings and habitat for the black bear and Florida panther. Where appropriate, TCP's habitat restoration projects will include plant species that provide forage for the prey of the Florida panther and forage for the black bear due to the presence of these species in the area of the Preserve. County staff will develop measures to protect the Florida panther and black bear through greenbelt and acquisition strategies. (Amended by Ordinance No. 92-48, 00-22).

Chapter VII, Objective 114.1 WETLANDS provides that Land Stewardship staff is directed to protect and conserve the natural function of wetlands and wetland systems through the enforcement of the county's wetland protection regulations and the goals, objectives, and policies in this plan. "Wetlands" include all of those lands, whether shown on the Future Land Use Map or not, that are identified as wetlands in accordance with F.S. 373.019(17) through the use of the unified state delineation methodology described in FAC Chapter 17-340, as ratified and amended by F.S. 373.4211 (Amended by Ordinance No. 94-30, 00-22).

E. Management Constraints

The principle stewardship constraints for TCP include limited funding, the brief dry season and increasing urbanization pressures. Although C20/20 has a management fund, it is inadequate to fulfill the restoration activities for this and the other preserves. Efforts to obtain additional funding through grants and/or monies budgeted for mitigation of public infrastructure projects will be pursued to supplement the operations budget to meet the restoration goals in a timely manner.

Approximately 217 acres of TCP is comprised of wetland communities. Stewardship activities will be conducted in the dry season when possible and if

access is necessary for stewardship activities when water levels are high, vehicles such as an all-terrain vehicle (ATV) may be used; otherwise staff will travel on foot. Several areas of the Preserve are difficult to reach with vehicles and heavy equipment. Additional culverts will be installed on the western and northern boundaries for access for staff and heavy equipment needs since currently all access is restricted to the southern Preserve boundary.

Urbanization pressures increasingly affect stewardship activities and boundary security. Fire management is a vital tool used to keep fuel loads down, to ensure biological diversity, and to maintain functional habitat value for wildlife. Smoke management will be one of the greatest factors in planning prescribed fires. Prescribed fire parameters become more restrictive with expanding residential and commercial development and increased traffic on nearby roadways. When restoration activities or prescribed burns are in progress that could be dangerous to visitors, signs will be installed at the entrance and on the trail near the management activity to warn the public that the area is temporarily closed. Boundary security is a constant challenge and regular patrols are conducted by C20/20 staff as well as other agency personnel to maintain secure fence lines and gates.

Fred Lewis has an active cattle lease with up to 200 head of cattle on the property. Coordination with Mr. Lewis will be needed while doing certain restoration projects, fence work and prescribed burns.

F. Public Access and Resource-Based Recreation

In accordance with the LSOM, TCP is currently classified as a Category 4 Resource Protection & Restoration Preserve. As with all designated Category 4 preserves, “if there is a public interest, staff may provide guided field trips when there are no safety concerns and it is compatible with protecting the animals and plant communities found at the specific preserve.” Future planned work to improve access, provide two low impact trailhead areas and create a marked, designated trail system will ultimately bring TCP to classification as a Category 2 Intermediate Use Preserve.

In 2009, C20/20 staff prepared a grant application for Florida Communities Trust (FCT). The FCT program provides funding for acquisition of conservation lands, which can be used for construction of resource-based recreational infrastructure. The public facilities at two C20/20 preserves, Prairie Pines and Caloosahatchee Creeks have been funded through successful FCT grant requests, and Galt and Wild Turkey Strand Preserve have FCT funding in place for construction of public facilities in the coming years. The FCT program was not funded in 2009 due to state budget constraints. Grant applications can only be submitted for the first two years of ownership of the conservation land, therefore, TCP will no longer be eligible for the program.

The current tight budget with Lee County government, combined with the lack of FCT opportunities, greatly limits the scope of nature-based recreation and infrastructure to support these offerings at TCP. C20/20 staff will pursue other grant opportunities as they become available. In the mean time, C20/20 staff has planned opportunities for the public which can be implemented within budget and in a timely manner in order to provide public access.

Additionally, no large scale recreational facilities or multi-use trail systems are necessary since resource based recreational opportunities including equestrian trails, mountain biking trails, wildlife viewing opportunities and nature photography can be found within a 5 minute drive from TCP at CRP. Alva Community Center, the Alva boat ramp and Hickey's Creek Mitigation Park offer many recreational opportunities and are located within a 15 minute drive of TCP. The Recreational Master Plan document for Babcock Ranch Preserve (BRP), located to the north and west of TCP, proposes large scale recreational opportunities including equestrian camping facilities, hunting, bicycle trails and concessionaire offerings. BRP will be a destination location for the region for outdoor recreation enthusiasts.

Many issues are taken into consideration in determining resource based activities which will be offered at C20/20 Preserves, including but not limited to, acreage of the site, viable access, presence of similar facilities nearby, plant communities present, listed species utilization, access points, soil constraints and hydrologic components. Restoration/stewardship activities can also impact resource based activity offerings in designated areas of a preserve.

The western portion of TCP will continue to be managed with an active cattle grazing lease until the area is restored and interaction between the public and the cattle will be minimized. The western portion of TCP also contains many miles of rusted barbed wire, cross fencing and multiple gates which could pose safety issues for the public. The possibility of a gate being accidentally left open by the public also poses the risk of cattle getting into areas of TCP they are not supposed to enter, or even out onto North River Road. The cattle on TCP are unusually curious and often follow staff around. Staff is aware of their curiosity and "friendliness" but the general public could be intimidated.

At TCP the main limiting factor, besides funding, is access onto the Preserve. Presently, staff can access the portion of TCP south of Telegraph Creek through a grassy, wet entrance adjacent to a private property at which there is no pull off area from North River Road and no culvert. Staff access to TCP north of Telegraph Creek is through a narrow paved driveway with limited visual distance and ditching on both sides (Figure 20). Neither of these access points is safe for public access in their current conditions, nor do they provide turn around areas for vehicles.

C20/20 staff met with Don Blackburn, Development Services Manager with LCDCD in July 2010 to discuss possible options for public entrances onto TCP. Through research, he identified that a public right-of-way easement still exists from the old alignment of North River Road. Unfortunately, after several months of research County Lands could not find any legal documents indicating whether or not the easement still exists and advised that C20/20 not pursue this option. The driveway will be a one lane road, approximately 800 feet long. Staff will use signage and as much vegetation trimming as possible to make this entrance safe. At the public meeting held on March 15th, C20/20 staff discussed this option with the attendees, as opposed to delaying the entrance for several years for permitting and construction of a 2 lane driveway and the audience was in support of trying the one lane driveway.

Both trailheads will have minimal fill. The driveway on the main portion of the Preserve will have an automatic gate that will be open during daylight hours as long as the trails are open. This will prevent visitors from driving back into the trailhead, only to discover that the trails are closed for a restoration activity or other unsafe conditions. It is also important since that trailhead is off the road and not visible to passing traffic. Actual dimensions for this trailhead will be constructed for the dual purpose of providing reasonable room for horse trailers and access for restoration equipment while minimizing the amount of fill and vegetation to be cleared. Staff will meet with equestrians before construction to ensure that their needs are considered. Both trailheads will have a pedestrian gates that have a spring to ensure they remain closed to ensure that the cattle are not accidentally released. No additional access points or neighborhood access gates are planned for TCP. Gates from private property onto the Preserve will not be allowed due to legal and liability issues, as well as potential conflicts with the active cattle lease.

Once these proposed entrances and primitive trailheads are constructed, a half mile of fencing will be installed on Parcel 236-2 to serve as pathway to direct hikers and equestrians from the trailhead along the south boundary fenceline to connect onto the trail system on the eastern half of TCP. This entrance will require another spring-loaded gate to ensure cattle do not enter the pathway. This will also provide C20/20 staff with an easy way to close access to trails when they are flooded, or during maintenance and restoration activities such as prescribed burning and mechanical vegetation management operations.

Due to the sensitivity of plant communities, soil types, protection of Telegraph Creek water quality and limited emergency vehicle access in the event of an injury, trails will be closed by staff when water is present on trails or authorized vehicle access trails. Trail placement was designed to follow the driest firelines and should minimize the length of time trails are closed. Equestrian trails and hiking trails will be marked, primitive, at grade trails on permanent firelines. Since TCP contains many wetlands and sensitive plant communities, additional trails will not be created. There will be two loop trails north of Telegraph Creek

totaling almost 7 miles in length. If equestrians or hikers deviate from designated trails, protection of the resource will take precedence and staff will re-evaluate trails and recreational offerings. Additionally, TCP is the only legal access point from Lee County onto the Bob Janes Preserve, which is currently being managed by the Babcock Ranch Preserve Management Partners. Due to this logistical limitation, public requests for access onto BJP will directly impact TCP. A loop trail is planned for BJP, so C20/20 staff will work to designate and mark a primitive, at grade hiking trail from a proposed primitive trailhead area on Parcel 412 in order to facilitate access. This is the only new trail creation proposed at this time. As of the writing of this LSP, a permit application for a culvert required to create a ditch crossing from TCP to BJP has been submitted to SFWMD and USACOE. An additional spring loaded gate will be installed at the ditch crossing to ensure cows from either preserve do not unintentionally get released into the adjacent preserve. Figure 21 shows the approximate location of all three trails. Before marking the trails, staff will consult with local equestrians and members of the local Florida Trails association for input on the final location with the understanding that the trails north of Telegraph Creek must utilize existing trails and avoid wetlands and the trail south of Telegraph Creek must be placed in upland areas and minimize impact on the natural plant communities.

C20/20 staff contacted Corkscrew Regional Ecosystem Watershed Trust (CREW) Executive Director Brenda Brooks for information on their equestrian trails and permit system. CREW lands have similar soil and plant community sensitivity as TCP, and is hydric, with trails going under water during heavy rain events as well as seasonally during rainy season. Equestrian access is only offered at one location and is limited to 12 miles of trails in the 60,000 total acres of CREW. Permits to ride must be submitted in advance and approved by staff. No more than 6 equestrians are permitted entrance on their requested day. Staff will not approve a permit when trails are under water. After C20/20 staff reviewed CREW's procedures, it was decided to not pursue permit only riding at TCP unless it becomes necessary in the future to limit any problematic issues that may arise. If parking issues arise, or there are safety problems with the one lane entrance or there is a notable deterioration of trails, or deviation from designated trails occurs at TCP, staff will look at implementing a ride by permit only policy similar to CREW's.

A natural, primitive landing exists in TCP at the junction of the first tributary entering the creek from the east upon entrance into the preserve from the south. This tributary is a pre-existing, artificial one that is complemented by a wide bank and gently sloping ground. It offers paddlers an opportunity to get out and stretch their legs, and to practice Leave No Trace picnicking. The site is seasonally available during high water (although it's muddy). No amenities or improvements need to be offered for this primitive landing site, but even without improvements, it is regarded as an amenity that recreational paddlers can – and already do – enjoy in TCP.

Conservation 20/20 staff members have observed that no launch site is needed for TCP because the need is met with nearby, existing and well-used sites:

- The road easement at the bridge on North River Road is available for parking and entry into the creek.
- W.P. Franklin Lock and Recreation Area has full amenities, free parking, easy launching and is nearly within sight of the mouth of Telegraph Creek on the Caloosahatchee. Franklin Lock is a designated launch site on the Great Calusa Blueway Paddling Trail and is frequently used by paddling clubs and individuals.
- Caloosahatchee Regional Park has a canoe/kayak launch area (and rentals) onto the Caloosahatchee. It is 2 miles east of TCP's eastern entrance and has paved parking. CRP is a designated launch site on the Great Calusa Blueway Paddling Trail and is frequently used by paddling clubs and individuals
- It also should be noted that dozens of private residential sites provide creek access to those with permission to launch as said sites.

Conservation 20/20 staff members do not recommend putting a kayak/canoe launch within TCP. Stricklin Gully is not navigable with paddle craft and is also located in the cattle lease area. The artificial tributary of Telegraph Creek, created as part of a failed development plan, is a muddy, shallow, Brazilian pepper infested stream fed by water seeping through the soil and rainfall. The tributary is roughly 0.6 miles from the trailhead and would represent a lengthy portage unlikely to be tolerated by preserve users. The portage to Telegraph Creek would be even longer and its creek banks are steep and would require infrastructure to be installed.

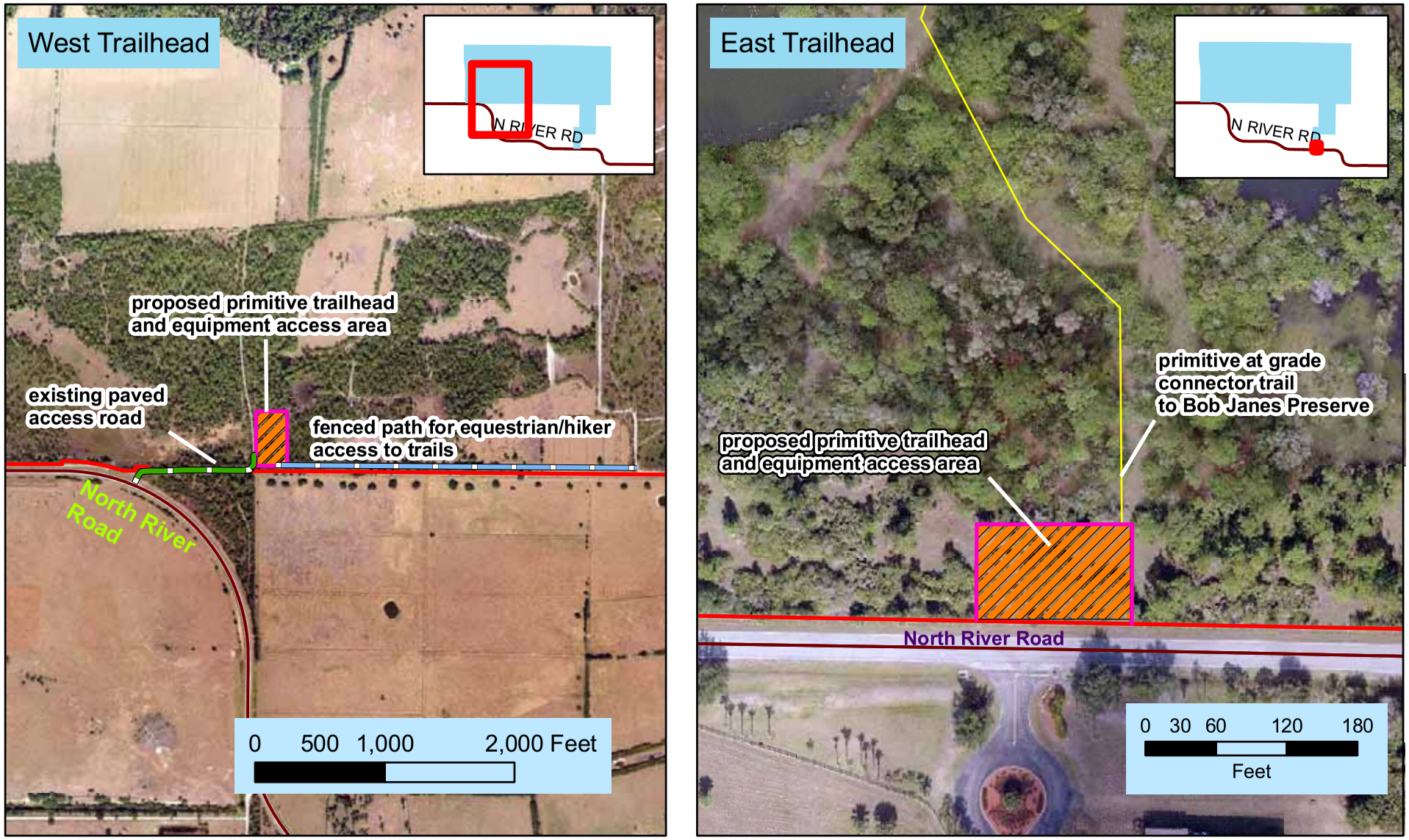
It should be noted that kayakers and canoeists – both residents and visitors to Lee County – are accustomed to encountering and using creeks and preserves that do not provide canoe/kayak launches and instead offer landings. Landings exist throughout the 190-mile Great Calusa Blueway Paddling Trail and are designated on the printed maps and www.calusablueway.com in way that prevents them from being confused with launch sites.

Bicycling trails will not be offered at TCP for several reasons. TCP is basically flat, has little shade along most firelines which will be used as trails, is predominantly sandy soil (sugar sand that is regularly disked) and has many hydric plant communities. Biking opportunities are present on the northside of CRP, where the local bike group, the Mudcutters, dedicates many hours to creating new trails and rugged terrain challenges. CRP also has a paved parking area able to handle the demand associated with their multiuse trail opportunities. The recreational opportunities planned for Babcock Ranch Preserve include many miles of bike trails, which will be accessible via entrances off of State Road 31.

C20/20 staff also evaluated the possibility of leashed dog walking on TCP and determined it would not be a compatible offering due to the presence of many listed species which could be detrimentally impacted by dogs and their waste, as well as the potential harm to cattle and dogs due to the cattle lease.

If there are additional recreational amenities that are currently offered on a C20/20 preserve that were not specifically considered for this plan, staff will evaluate the possibility of allowing it during an interim basis. Otherwise, recreational amenities will be reexamined during the next revision of this plan (2021).

Figure 20: Proposed Public Access Map



Telegraph Creek Preserve

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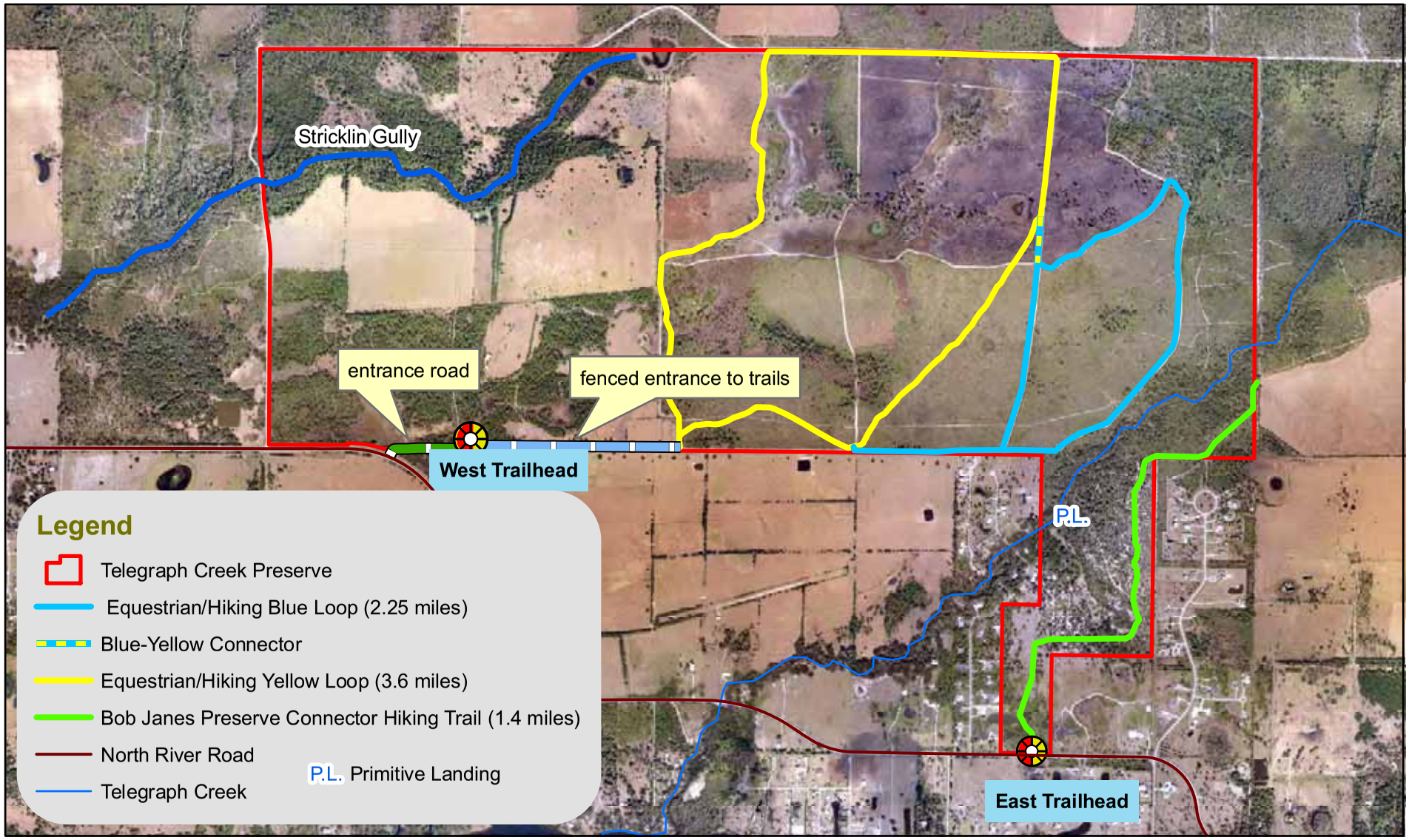
C2020\Telegraph_Creek_Preserve\TCP_public_access.mxd
Map Prepared On: 8/18/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 21: Proposed Master Site Plan



Telegraph Creek Preserve

0 0.3 0.6 1.2 Miles

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Map Prepared On: 8/18/10 by lgreeno@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

G. Acquisition

TCP was acquired as two parcels through the C20/20 Program for a total cost of almost $24 million. The first, nomination 236, was originally nominated to the Program by Tom Baker in January 2003 as a 1,114 acre parcel with an asking price of $10,299,500. By April 2003, the seller revised it to include an additional 461 acres with a total asking price of $15,000,000 for 1,575 acres. After review by staff & CLASAC, it was recommended to pursue for acquisition. An agreement could not be reached on the asking price and it was withdrawn from consideration and sold to Benderson Development in March 2004.

The new owners of the property (three entities) renominated the property, 236-2 and another 165 acre parcel, nomination 412, in January 2008. One year later, both nominations were purchased in January 2009. Legal descriptions for acquired parcels are located in Appendix D.

Relevant acquisition information on the two successfully acquired TCP nominations is located in Table 5.

Table 6: Telegraph Creek Preserve Acquisition Information

Site #	Boundary Survey (Acres)	County Lands (Acres)	C20/20 Acquisition $	Date Acquired	Original STRAP# (per legal descriptions)	Current STRAP#
236-2	1573.81	1565	$15,924,102	01/30/09	09-43-26-00-00002.0000 10-43-26-00-00002.0000 10-43-26-00-00003.0000 10-43-26-00-00004.0000 11-43-26-00-00001.0010 11-43-26-00-00001.0020	09-43-26-00-00002.0000 10-43-26-00-00003.0000 10-43-26-00-00002.0030 10-43-26-00-00004.0000 10-43-26-00-00001.0000 11-43-26-00-00001.0020 11-43-26-00-00001.0000
412	152.97	165	$7,975,898	01/30/09	10-43-26-00-00001.0000 11-43-26-00-00001.0000 14-43-26-00-00002.1000	11-43-26-00-00001.0050 14-43-26-00-00002.1000
TOTAL	**1726.78**	**1730**	**$23,900,000**			

Figure 22 illustrates the acquired and nominated parcels by the C20/20 Program. Two additional properties have been nominated in close proximity to TCP. Nomination 450, a 2,250-acre parcel, was nominated in January 2009 and withdrawn in October 2009 due to failed negotiations. Nomination 460 was nominated to the Program in January 2009 and has also been withdrawn from consideration at this time.

The Preserve has three Future Land Use (FLU) categories shown on Figure 23. Most of Site 236-2 is listed as “DRGR” and nearly 90 acres as “Wetlands,” while most of Site 412, is listed as “Rural” and a northern portion east of the creek is “DRGR.” The DRGR land use category was created in 1991 in an agreement between the Florida Department of Community Affairs and Lee County in an effort to protect the recharge capabilities of the surficial and ground water aquifers. This land use restricts development to 1 unit per 10 acres. Staff will coordinate with Lee County Department of Community Development, Division of Planning (LCDP) to change the FLU to “Conservation Lands.”

Currently, all of TCP is zoned as agriculture “AG-2” (Figure 24). C20/20 staff is in the process of coordinating with LCDP to change the zoning to “Environmentally Critical.”

Figure 22: Acquisition and Nominations Map

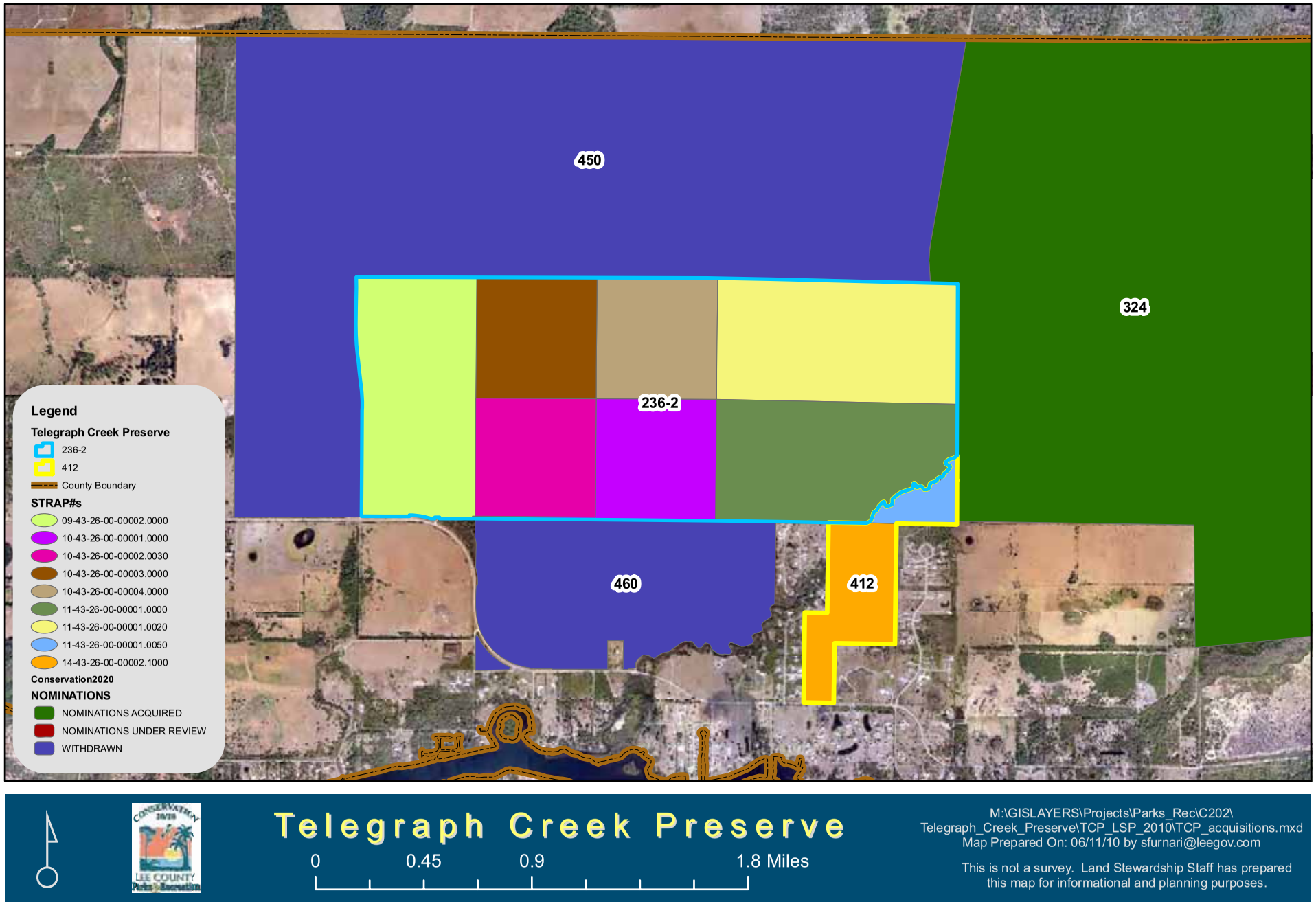
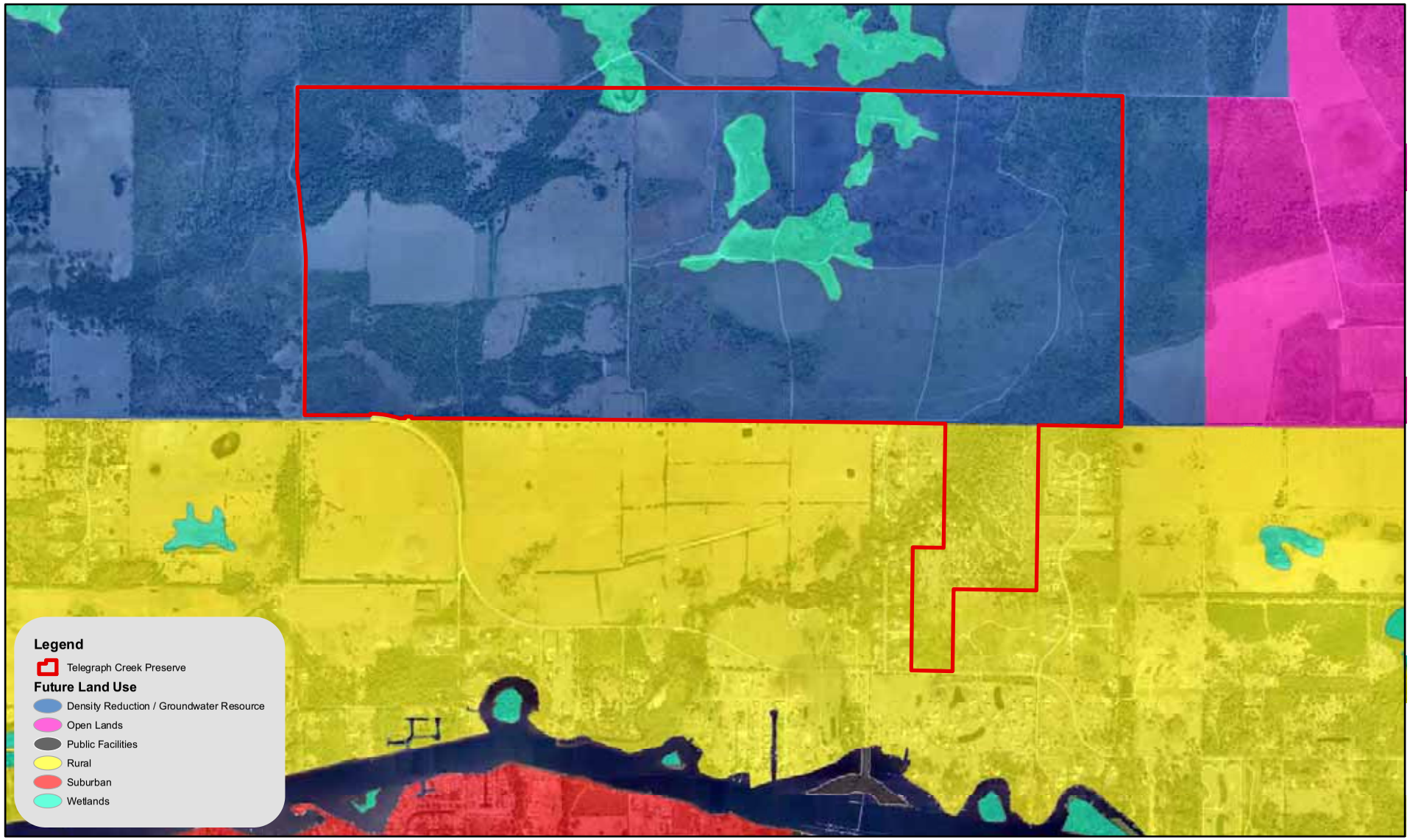


Figure 23: Future Land Use Map



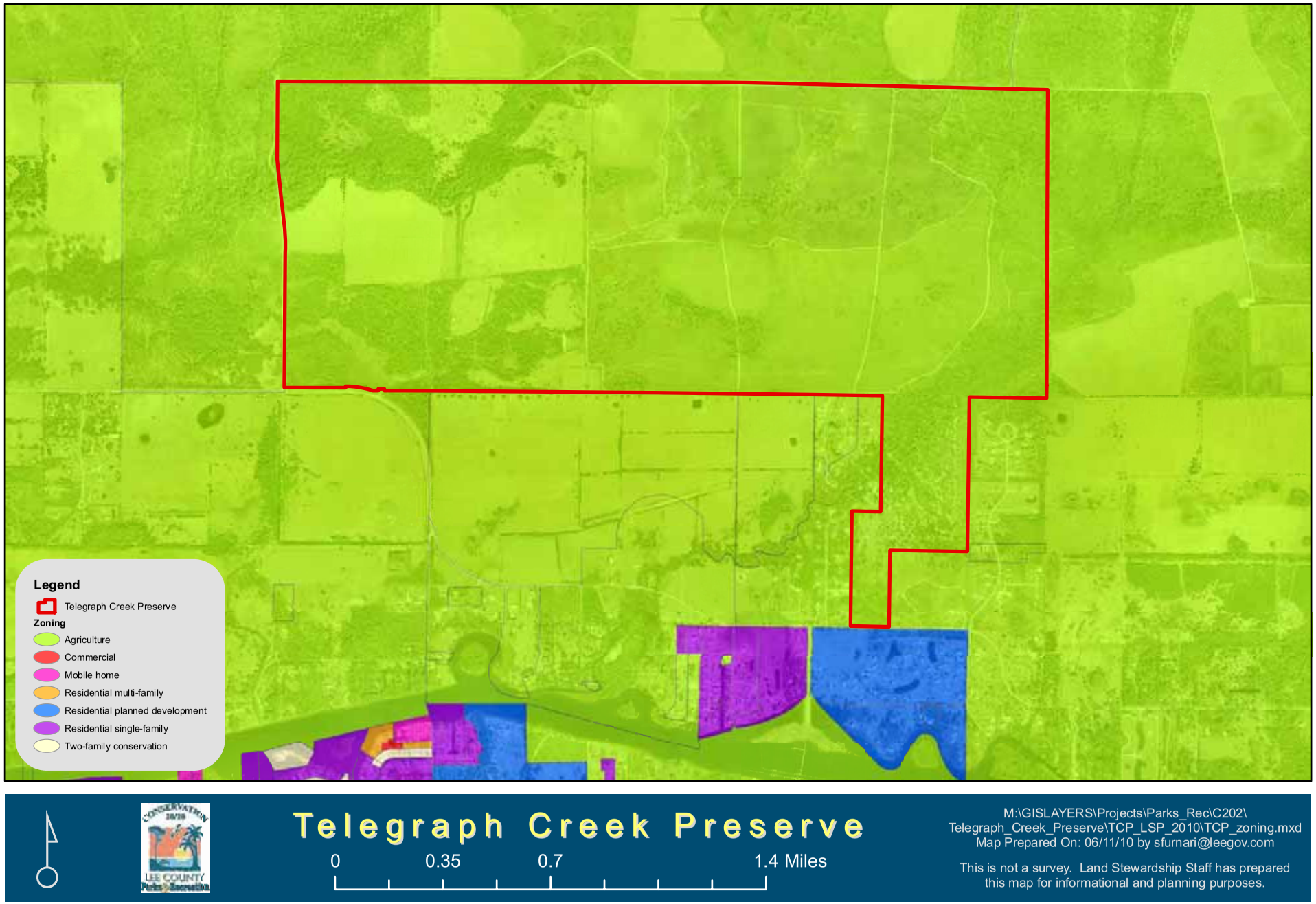
Telegraph Creek Preserve

0 0.35 0.7 1.4 Miles

M:\GISLAYERS\Projects\Parks_Rec\C202\Telegraph_Creek_Preserve\TCP_LSP_2010\TCP_FLUM.mxd
Map Prepared On: 06/11/10 by sfurnari@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Figure 24: Zoning Map



VI. MANAGEMENT ACTION PLAN

A. Management Unit Descriptions

TCP has been divided into nine management units (MU) to better organize and achieve management goals. Figure 25 delineates the MUs that were created based on existing trails, roads, ditches, berms and plant communities. Management Units 1-5 are part of the cattleman's pasture rotation and are numbered according to the historic numbering system. Acreage for all units has been rounded to the nearest whole acre.

Currently three of the MU's have been sub-divided into burn units (Figure 25). As pine tree thinning and shrub reduction activities take place in other management units, some will be subdivided into burn units. C20/20 staff will try to use existing vegetation breaks and other disturbances that may happen during restoration work to delineate burn units. It is hoped that the restoration activities will eventually lead to scrub jays returning to the Preserve. Burn units will be created to keep in mind the recommendation that no more than 1/3 of their territory be altered in any one year once they return to the site.

- MU 1 (128 acres) is located on the western side of TCP, adjacent to the south boundary. This is part of the cattle rotation area. It contains the paved driveway leading to the concrete pad where the former house stood, as well as a small shed. Approximately 49 acres of this MU are improved pasture. Half of this MU is wet and mesic flatwoods.

  Some of the Brazilian pepper growing on a fenceline was treated in place in this MU in 2010 after being mowed by LCDOT.

  Most of the flatwoods in this unit needs thinning, brush reduction and exotic plant removal. The two most prevalent invasive exotics are Brazilian pepper and rose myrtle. There are some isolated wetlands that have been invaded by wax myrtle that will need to be removed or treated in place. After this work is complete, prescribed fires will be used as a management tool. There are two interior fences in this MU that are no longer used and will be removed. Long-term goals for this MU include pasture restoration. This unit will also contain the primitive trailhead for equestrian users and hikers as well as a fenced off chute leading from the trailhead to MU 6 where the trails are located.

- MU 2 (86 acres) is located on the west-central portion of the Preserve. It is part of the cattle rotation area. This unit is almost entirely improved pasture and is fenced off from other portions of the Preserve.

Some of the Brazilian pepper growing on a fenceline was treated in place in this MU in 2010 after being mowed by LCDOT.

There are additional Brazilian pepper bushes in this unit that will need to be removed by mechanical methods. Long-term goals for this MU include pasture restoration.

- MU 3 (221 acres) is located on the northwestern side of TCP. It is a diverse mosaic of wetland communities (including Stricklin Gully), hammocks, flatwoods and pasture. Almost half of this unit consists of mesic, scrubby and wet flatwoods. This is part of the cattle rotation area. Approximately 67 acres of this MU are improved pasture.

  Most of the flatwoods in this unit needs thinning, brush reduction and exotic plant removal. The two most prevalent invasive exotics are Brazilian pepper and rose myrtle. Scattered Old-World climbing fern has been found in Stricklin Gully. After this work is complete, prescribed fires will be used as a management tool. There are some isolated wetlands that have been invaded by wax myrtle that will need to be removed or treated in place. Long-term goals for this MU include pasture restoration.

- MU 4 (90 acres) is located on the west-central portion of the Preserve, adjacent to the western boundary. It is part of the cattle rotation area. This unit is almost entirely improved pasture and is fenced off from other portions of the Preserve. It also contains a cattle penning area on its south boundary.

  Some of the Brazilian pepper growing on a fenceline was treated in place in this MU in 2010 after being mowed by LCDOT. There are additional Brazilian pepper bushes in this unit that will need to be removed by mechanical methods. Long-term goals for this MU include pasture restoration.

- MU 5 (116 acres) is located in the southwest corner of the Preserve. The majority of this MU is mesic flatwoods, with a fairly deep wetland/slough system in the southern third. Although this is part of the cattle rotation, only 3 acres are improved pasture. The current cattleman refers to this portion of the Preserve as the “heifer pasture” and rarely puts cows in it.

  Most of the flatwoods in this unit needs thinning, brush reduction and exotic plant removal. After this work is complete, prescribed fire will be used as a management tool. The most prevalent invasive exotic is rose myrtle, although there is some Brazilian pepper, cogon grass and melaleuca patches. There are some isolated wetlands that have been invaded by wax myrtle that will need to be removed or treated in place.

- MU 6 (788 acres) This unit is comprised of most of the central portion of TCP. It has a history of management with prescribed fire and invasive exotic plants are scattered. It is sub-divided into 7 burn units that are delineated by established fire lines. The equestrian and hiking trails will be placed on established trails within this MU.

  Several staff workdays have been conducted to cut all large melaleuca and staff is treating resprouts and seedlings as they appear. C20/20 staff has done some roller chopping on the perimeters of the burn units as well as widening some of the firelines adjacent to the Preserve boundaries. Prescribed burns have been conducted in 2009 & 2010 in 6 of the 7 burn units.

  In addition to continuing to conduct burns and treat melaleuca, there are some additional invasive exotic plants including Brazilian pepper and cogon grass. These plants are typically found in areas that have had soil disturbance. Approximately 16 acres of flatwoods within this MU need thinning and chopping and there is approximately 40 acres of wet flatwoods and prairies that need to have wax myrtle removed or treated in place.

- MU 7 (153 acres) is located on the eastern side of the Preserve, north of Telegraph Creek. This MU has pine flatwoods on the north and transitions into high, dry scrubby flatwoods, scrub and xeric hammock. Invasive exotic plants are scattered in this unit. Of most concern are some scattered patches of cogon grass growing near Telegraph Creek. This MU currently has 1 designated burn unit, and additional units will be created as restoration activities take place.

  Some mechanical brush reduction has already taken place on the southern portion of this unit and some firelines have been created.

  Stewardship activities for this MU include establishing interior and exterior firelines, invasive exotic plant removal, extensive brush and oak reduction in the scrubby flatwoods and scrub communities as well as additional brush reduction and pine tree thinning in the flatwoods on the northern end of this MU. Prescribed fire will be used as a management tool in this MU. This MU also has the washout and sinkhole due to a drainage ditch in the adjacent MU 6 that will need to be restored.

- MU 8 (116 acres) is located on the arm, just south of Telegraph Creek and extending to portions of the Preserve that were cleared for cattle grazing. Portions of this MU were altered in a failed attempt to build a housing development. Part of that development, the tributary to Telegraph Creek, are contained in this MU. Plant communities adjacent to the Telegraph Creek are hammock communities which quickly transition to scrubby

flatwoods. This MU has been divided into 3 burn units. The tributary has Brazilian pepper growing adjacent to the banks as well as some cogon grass. Scattered patches of Old-World climbing fern grow on both creek banks.

Staff and volunteers have had workdays to treat Old-World climbing fern and cogon grass. In the spring of 2010, FWC awarded C20/20 a gopher tortoise habitat improvement grant which staff used to install firelines, roller chop palmetto and reduce the live oaks that has overtaken the scrubby flatwoods due to fire suppression. Additional brush reduction work was conducted in the fall of 2010 to reduce additional heavy palmetto coverage in the hammock communities.

Management activities for this MU will involve prescribed burning, trash removal and exotics removal/treatment. This unit will also contain the majority of the BJP Connector Trail.

- MU 9 (29 acres) is the more disturbed portion of the arm. Much of this area was cleared and the wetlands were altered as part of the development mentioned in the previous MU description. There are some flatwoods on the western side of this MU. Further south the MU becomes increasingly covered with Brazilian pepper and other invasive exotic plants. There is also a cow pen in this MU on the north end that will remain in use at this time.

  Management activities for this MU will involve exotics removal/treatment, and fireline installation. The primitive trailhead for the BJP Connector Trail will also be located in this MU.

Figure 25: Management Units Map

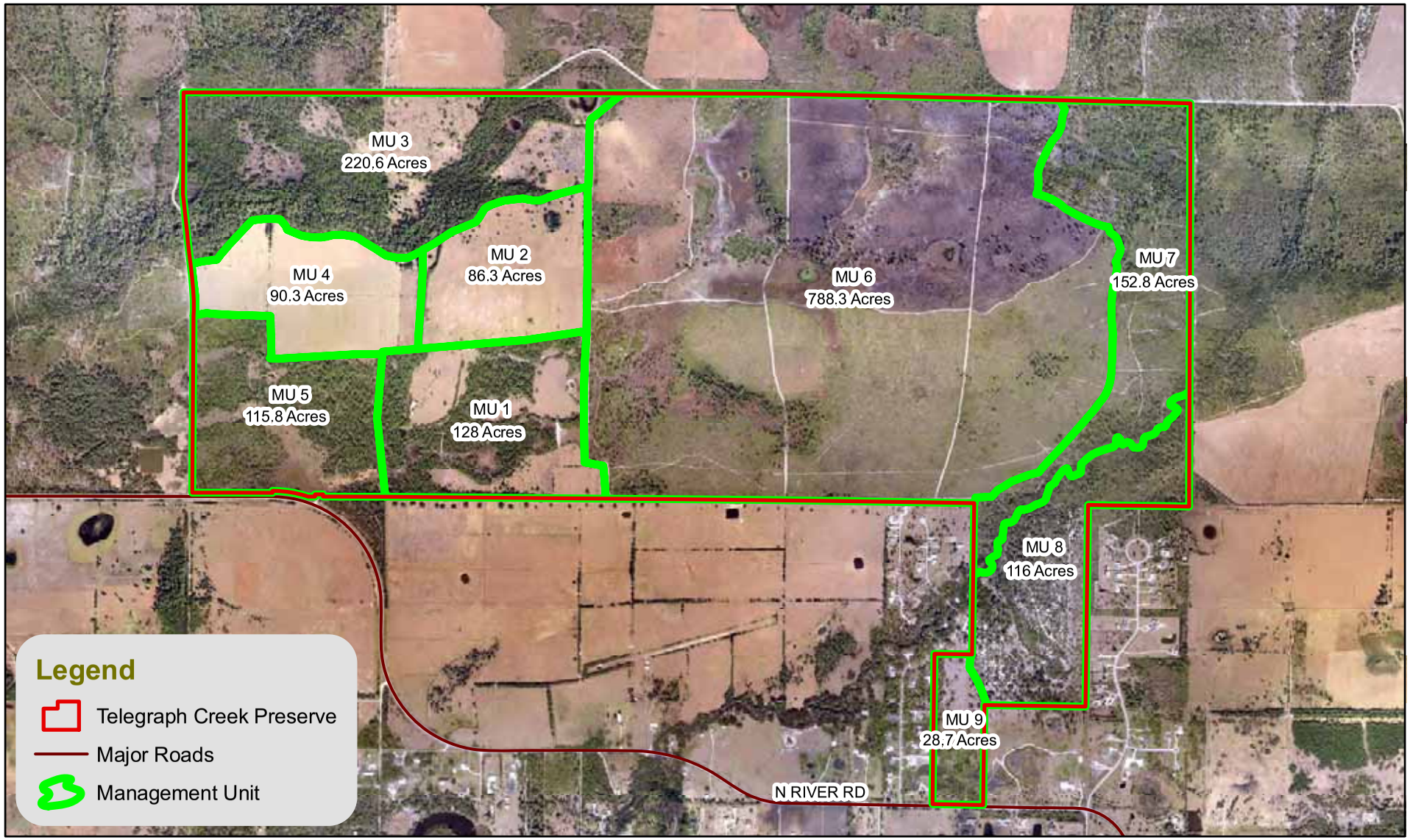
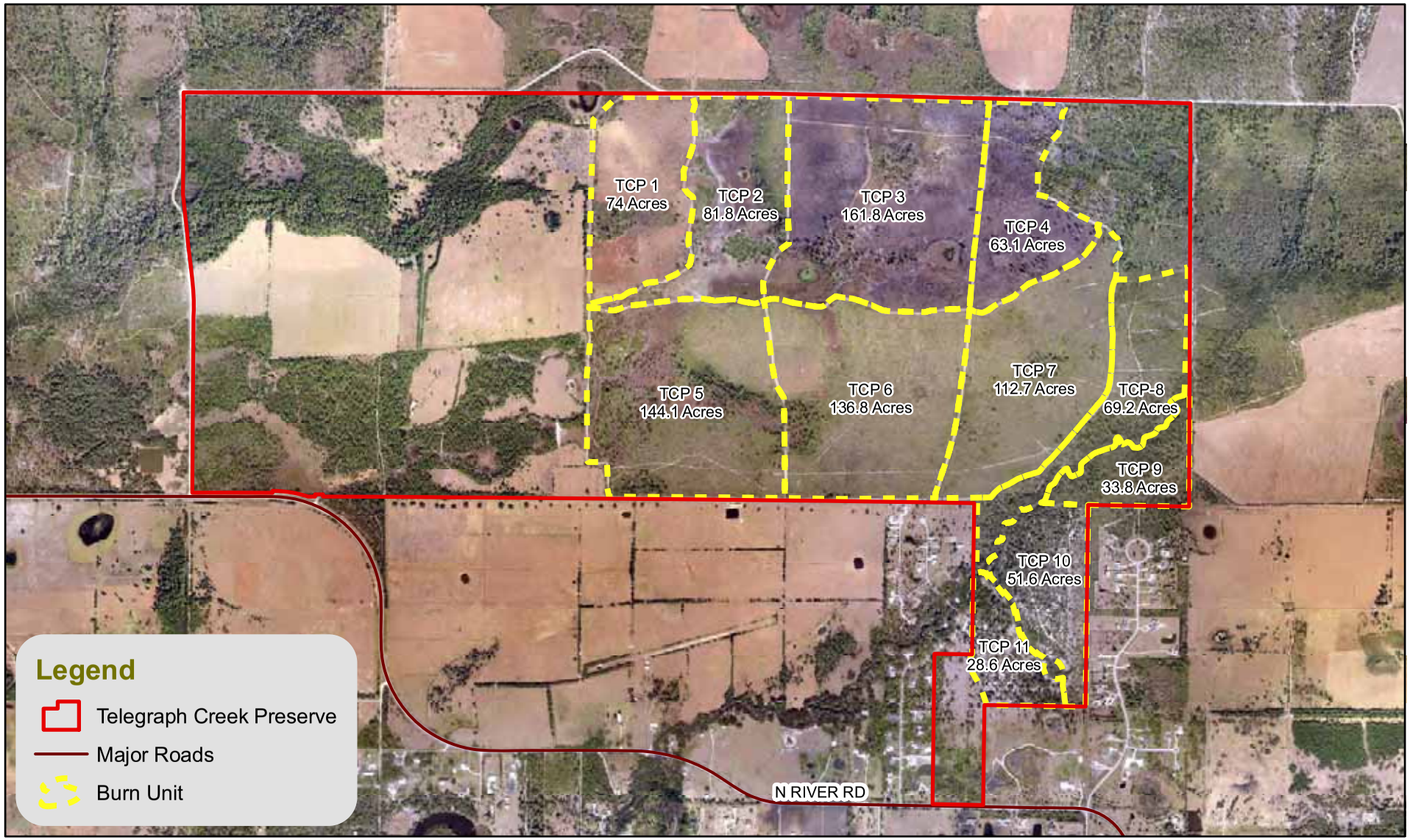


Figure 26: Current Burn Units Map



B. Goals and Strategies

The primary management objectives for TCP are habitat improvements for the Florida scrub jay and gopher tortoise, on-going prescribed burning and removal and continued treatment of invasive exotic plants to insure they are kept at a maintenance level. Although funding is currently not available to conduct all of these stewardship activities, tasks at TCP will focus on the following and will be prioritized in order of importance and ease of accomplishment. Grants and/or monies budgeted to mitigate public infrastructure projects will be used to supplement the operations budget to meet our goals in a timely manner.

Natural Resource Management

- ✓ Exotic plant control/maintenance
- ✓ Scrub jay and gopher tortoise habitat improvement
- ✓ Prescribed fire management
- ✓ Mechanical brush reduction
- ✓ Monitor and protect listed species
- ✓ Exotic and feral animal removal
- ✓ Hydrologic and spoil restoration
- ✓ Restoration of pastures and abandoned fields

Outside Consultants

- ✓ Public access design/permitting
- ✓ Environmental/engineering

Overall Protection

- ✓ Install/maintain fire breaks
- ✓ Boundary fence installation and interior fence removal
- ✓ Boundary sign maintenance
- ✓ Renovation of storage building
- ✓ Assess cattle lease
- ✓ Change Zoning and Future Land Use categories
- ✓ Debris removal and prevent dumping

Public Use

- ✓ Infrastructure improvements for public access

Volunteers

- ✓ Assist volunteer group(s)

The following is a description of how each of these goals will be carried out, the success criteria used to measure accomplishment of each goal and a projected timetable outlining which units each activity will take place in and when.

Natural Resource Management

Exotic plant control and maintenance

The most current Florida Exotic Pest Plant Council's (FLEPPC) List of Invasive Species will be consulted in determining the invasive exotic plants to be controlled in each management unit. The goal is to remove/control these exotic species, followed with treatments of resprouts and new seedlings as needed. This goal will bring the entire Preserve to a maintenance level, defined as less than 5% invasive exotic plant coverage.

Prior to each invasive exotic plant control project at TCP performed by contractors, a Prescription Form (located in the LSOM) will be filled out by the contractor(s), reviewed & approved by the C20/20 staff, and final project information entered into the GIS database.

- Uplands with light to moderate infestations:

  In areas where invasive plants are sporadic and below 50% of the vegetation cover, hand removal will be utilized for control. Specific methodology will depend on stem size, plant type and season, but generally the stem will be cut near the ground and the stump will be sprayed with appropriate herbicide, or a foliar application will be applied to the entire plant. Hand pulling will be utilized when possible with appropriate species in order to minimize herbicide use. Basal bark treatment may be used at some locations. Cut stems may be piled to facilitate future potential burning, chipping or removal from site. No replanting will be needed due to significant presence of native vegetation and the native seed bank.

- Uplands with moderate to heavy infestations:

  In areas where the exotics occur as monotypic stands or are higher than 50% of the vegetation cover, the use of heavy equipment will be utilized in appropriate communities and during suitable season. Heavy equipment will be chosen so that soil disturbance and compaction are minimized. In areas along ditches where the hydric soils may not be conducive for heavy equipment, hand crews will be used to cut down and remove these plants. Tree debris will then either be pile burned or mulched. Mulching equipment may be used. Follow-up treatment of these areas will include an application of an appropriate herbicide mixture to the foliage of any resprouts or seedlings. C20/20 staff will evaluate replanting areas on a case-by-case basis.

- Wetlands with moderate to heavy infestations:

  At suitable locations such as seasonal ponds, lightweight equipment may be utilized during dry, winter periods or hand crews will need to hike in on foot and either foliar, girdle, basal bark, or cut-stump the exotics with the appropriate herbicide. Follow-up treatments will need to be conducted on at least an annual basis and may eventually decrease to every two years. Where feasible or necessary, biomass may be removed from sites to be piled and burned and/or mulched.

- Wetlands with light to moderate infestations:

  Hand crews will need to hike in and foliar, girdle, basal bark, or cut-stump treat the exotics with the appropriate herbicide. Follow-up treatments will need to be done on an annual basis and may eventually decrease to every two years. Where feasible or necessary, biomass may be removed from wetland sites to be piled and burned and/or mulched.

Since 2009, staff, with assistance from volunteers, have completed nearly fifty acres of exotic plant removal work. Nearly half of the Preserve, or approximately 800 acres, are considered at a maintenance level. Figure 27 identifies areas needing exotic plant control work.

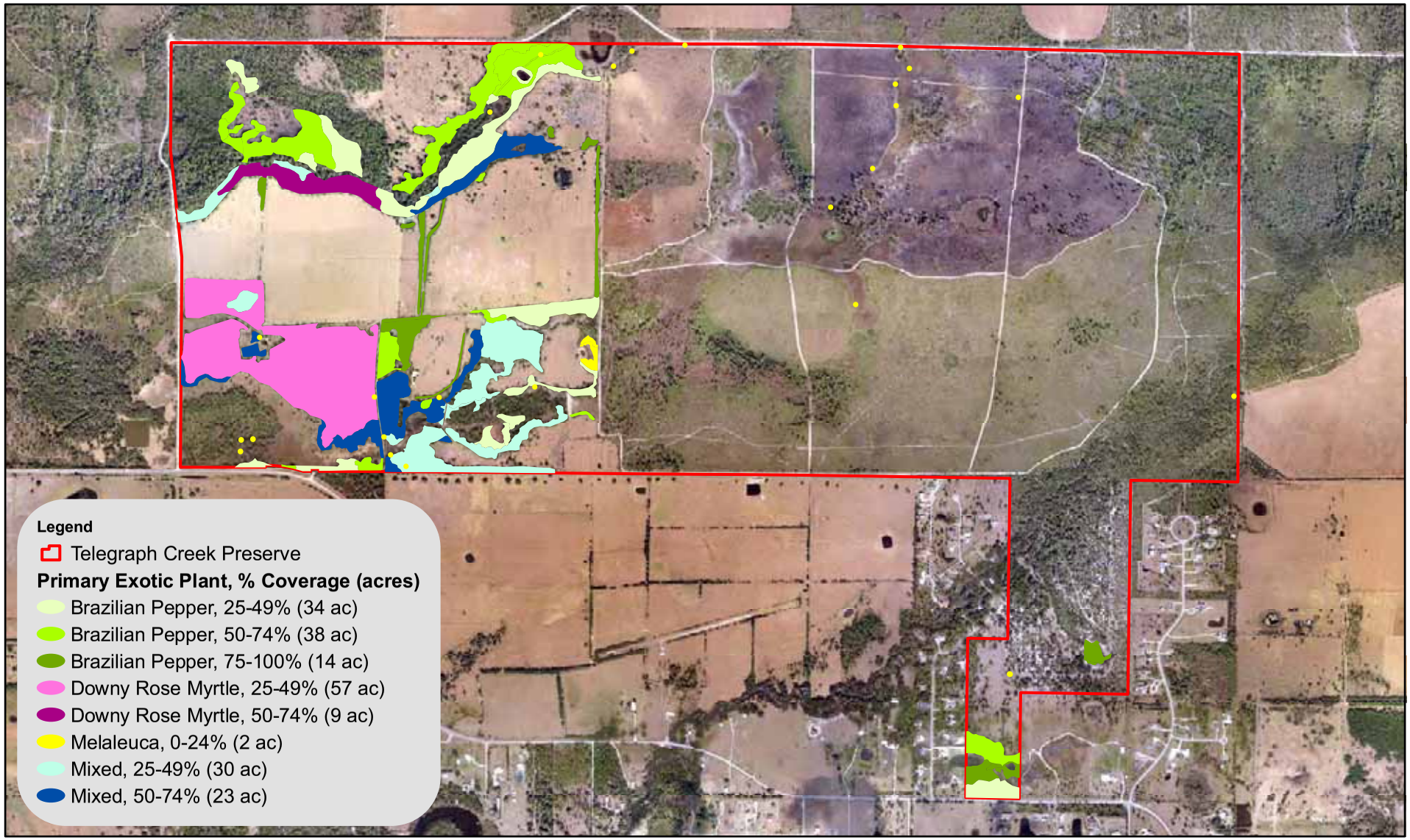
Scrub jay and gopher tortoise habitat improvements

As mentioned in earlier sections, C20/20 received an FWC grant for habitat improvement for gopher tortoises. While a section of scrubby areas were improved from this project, additional overgrown communities require work as well. Florida scrub jay and gopher tortoise benefit from these restoration efforts. The overall goals for restoration will be to provide conditions conducive to jays' dispersal and travel between known territories and/or to create and maintain habitat conditions favorable for introduction and/or expansion of scrub jay families across the Preserve by:

- Reduce vertical structure of vegetation so the majority of the height of shrub and tree cover is less than 10 feet high.
- Providing 2-3 pockets of scattered clumps of tall palmetto that will not be altered mechanically to provide nesting habitat for Florida scrub jays in each management unit.
- Create and maintain open, sandy areas for food caching by disking caching areas if naturally open areas become encroached upon.

If scrub jays return to TCP, staff may coordinate with FWC biologists to assist with monitoring and banding any population in conjunction with regional banding efforts.

Figure 27: Exotic Plant Control Map



Prescribed fire management

A prescribed fire program has been implemented that closely mimics the natural fire regimes for the different plant communities to increase plant diversity and ensure tree canopies remain open. Once restoration projects are completed in management units that contain fire dependent communities, prescribed burns will be performed after the creation of appropriate fire lines/breaks. The timing of prescribed burning will be influenced by seasonal rain, staff and equipment availability, listed species requirements and wind patterns. The C20/20 Burn Team Coordinator has coordinated with the FDOF and finalized the C20/20-wide Fire Management Plan that applies to all Preserves.

Prescribed fire may be utilized for exotic plant control of seedling/sapling in areas previously treated.

C20/20 staff will coordinate prescribed burn efforts at the Preserve with the managers of adjacent conservation lands and inform adjacent neighbors of imminent burn plans.

Mechanical brush reduction

Before a prescribed fire is conducted in pine flatwoods or other fire dependent communities of the Preserve, fuel loads may need to be reduced. Slash pines, saw palmettos and/or invading oaks and wax myrtles may need to be thinned mechanically in overgrown areas to achieve desired results and to prevent crown fires or intense fires from occurring. Some patches of dense vegetation will be left in areas to provide cover for Florida Panthers and Florida black bears.

In April 2007, the BOCC approved the Partnership Agreement between FDOF and Lee County to selectively remove native pine trees from densely populated stands that will achieve these ecological and/or safety goals (Appendix E). Figure 28 identifies areas where heavy equipment is needed to reduce dense pine stands and additional work to roller-chop or mow other locations with overgrown saw palmetto and other shrubbery (primarily oaks and wax myrtle).

Monitor and protect listed species

There are several listed species that have been documented on the Preserve including Florida panther, gopher tortoise, wood stork, Florida sandhill crane, and both giant and cardinal airplants. These species will benefit from exotic plant control, prescribed burns, pasture and hydrological restoration activities. During stewardship activities, efforts will be made to minimize negative impacts to listed species.

TCP is part of a countywide tri-annual site inspection program conducted for all C20/20 preserves. The site inspection spreadsheet is available on the LCPR's computer server ("S" drive). These inspections allow staff to monitor for impacts and/or changes to each preserve and includes lists of all animal sightings and new plant species that are found. If, during these inspections, staff finds FNAI listed species, they will be reported using the appropriate forms.

Exotic and feral animal removal

Five exotic animal species have been recorded on TCP. C20/20 staff is primarily concerned with the feral hog. Currently, the only acceptable method of hog removal on C20/20 preserves is trapping, but more aggressive removal methods are needed. Staff are exploring quota/management hunts in conjunction with FWC and hiring nuisance wildlife personal to shoot hogs at night. Removing all hogs is an unreasonable goal; therefore a control program will need to be continuous on a long-term basis. If practical, a methodology will be established and implemented against other unwanted exotic animal species.

Although not noted at TCP, this Preserve, like other C20/20 preserves, does not contain nor will it support feral cat colonies. FWC's Feral and Free Ranging Cats policy is *"To protect native wildlife from predation, disease, and other impacts presented by feral and free-ranging cats"* (FWC 2003). Any feral cats will be trapped and taken to Lee County Animal Services.

Hydrologic and spoil restoration

For specific locations at TCP, an engineering consultant(s) will need to be hired to provide specific recommendations for restoration methods on agricultural ditches that affect sheet flow or prairie/scrub locations impacted by previous linear ditching/ vegetation removal activities that unnaturally drain the prairie and causes soil erosion. A restoration proposal(s) will be presented to SFWMD and USACOE to determine the feasibility of the project and decide which permits will be required. Staff will evaluate which artificial ponds/cow wells will be filled in before and/or after the cattle lease ends. Artificial ponds that are unnecessary and serve no useful wildlife benefit will be filled in with its' original adjacent spoil.

To accomplish this work, exotic vegetation would be removed from the berms along the ditches or adjacent to artificial ponds. This will be accomplished with a combination of hand crews and mechanical equipment using the appropriate herbicide. This work must be completed when the water table height is low enough to minimize rutting by heavy equipment. The backfill shall not include vegetation particularly in the bottom of the ditch to prevent "piping." Replanting with native species will be evaluated after ample time has been given for native recruitment.

Besides rehabilitation of linear lines (e.g. ditches, trails), the drainage and wash out into Telegraph Creek on the eastern half of the preserve will require installing culverts (<24") where the drainage crosses the existing trails, cleaning out the existing swale where the water currently flows into the creek, grading the path to make a gradual slope from the current sharp drop off and creating an additional shallow swale that will allow the water a straight path to travel through the vegetation and into the creek as opposed to the current two 90^{o} turns that are causing the wash out. Additional plantings may be required to reduce soil erosion.

Restoration of pastures and abandoned fields

To add community diversity to the Preserve, nearly 300 acres of abandoned fields and improved pastures will be restored to native plant communities. Restoration of these areas will require several months of data collection to make informed decisions on which plant community would be most successful. Deep soil samples will be taken and analyzed in several portions of the pasture. A rain gauge and additional monitoring wells will be set up in strategic areas to monitor water levels over an entire rainy season and a portion of the dry season. Once the data are analyzed, appropriate plans for native plantings will be developed that could include using seeds and/or plants. To prepare the pasture for plantings it will be necessary to eliminate the pasture grasses. This may be accomplished by repeated disking followed by treating the exotic pasture grasses with an appropriate herbicide. Another option that may be explored is selling the bahia as sod to reduce the amount of herbicides costs associated with pasture restoration. A third option could be to allow natural succession to take place. Once the exotic plants are under control, an established planting plan will be executed.

Outside Consultants

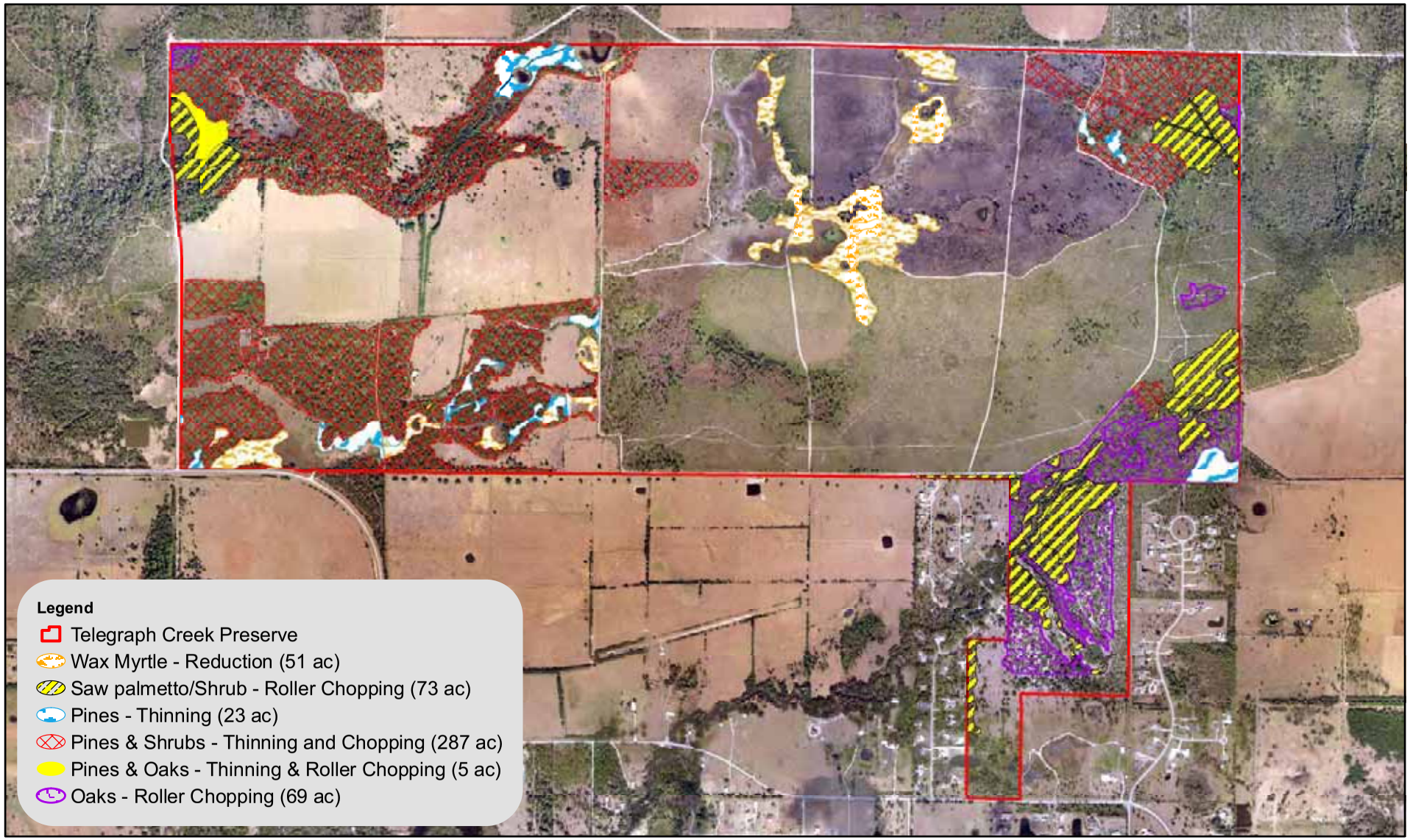
Environmental/engineering

Environmental and/or engineering contractors will need to be hired to perform all or most aspects for the pasture and hydrological restoration projects. The consultant will also be responsible for coordinating and obtaining appropriate environmental permits before restoration efforts begin.

Public access design/permitting

A firm has been hired to develop engineering plans and apply for permits to install a culvert to cross over an agricultural ditch into BJP. Either this consultant or another may need to be hired to design plans and/or obtain permits to create appropriate public access entrance areas. A consultant may be hired to implement & oversee construction of appropriate entrance(s) if the scope-of-work is outside LCPR's capabilities.

Figure 28: Mechanical Reduction Map



Telegraph Creek Preserve

0 0.25 0.5 1 Miles

M:\GISLAYERS\Projects\Parks_Rec\C2020\Telegraph_Creek_Preserve\TCP_LSP_2010\TCP_mechanical_reduction.mxd
Map Prepared On: 09/29/10 by sfurnari@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Overall Protection

Debris removal and prevent dumping

TCP has debris scattered throughout portions of the Preserve. Staff anticipates that during restoration activities, the debris will be removed. Several workdays may be required to remove the trash that has accumulated through the years (prior to acquisition) and will include the removal of unwanted interior fencing and cattle pens not required for grazing operations. During tri-annual site inspections, any additional smaller objects that are encountered will be removed. C20/20 Rangers will also assist with removing small items when they are on patrol at the Preserve.

C20/20 staff recognizes an existing chronic illegal dumping area along Argo Drive, on both TCP and the private property adjacent to the Preserve. This is a persistent problem and staff and/or volunteers will have occasional work days to remove debris or it will be dealt with depending on the nature of the debris.

Install/maintain fire breaks

Perimeter and internal fire breaks will be created, where needed, to reduce the potential damage to areas outside the Preserve from a wildfire or prescribed fire. Once C20/20 staff has coordinated the installation of necessary fire breaks, staff will maintain these breaks on a yearly basis by either mowing or disking. See Figure 29 for map of areas with existing and needed fire breaks.

Boundary fence installation and interior fence removal

The entire perimeter of the Preserve is fenced to prevent activities such as dumping, illegal use of motorized vehicles and to maintain cattle within leased areas. Some of the existing fencing is in disrepair and will be replaced when time and funding permits. The barbed wire fence on the arm will be replaced with hog wire so that some hog trapping can take place on this heavily damaged portion of the Preserve. Any interior fences that are used for the existing cattle license will be removed once the lease is terminated.

Boundary sign maintenance

Boundary signs have been installed along over four miles of the southern perimeter boundary line to further protect the Preserve. The other three sides have not been posted at this time since the access to these areas is behind a locked gate managed as part of Babcock Ranch. When the area becomes accessible, signs will be posted on these sides of the Preserve. Missing or damaged signs will be replaced. C20/20 Rangers or staff will check for boundary

signs during the patrols and replace them immediately if possible or report the problem to the C20/20 Senior Supervisor. Boundary signs will be placed every 500 feet.

Renovation of storage building

Staff will coordinate with Lee County's Facilities Services staff to evaluate and provide recommendations on needed repairs and improvements to the existing storage building. Ideally, the building could hold materials for fence repairs, sign installation and replacement, hand tools and possibly sprayers for herbicide treatments. These materials would be available for TCP as well as other C20/20 preserves in the northeast portion of the County. Additionally, the building could store equipment for a multi-day restoration project. Either Maintenance & Repair Service (MARS) or a contractor(s) will be used to make necessary improvements in the most cost-effective manner.

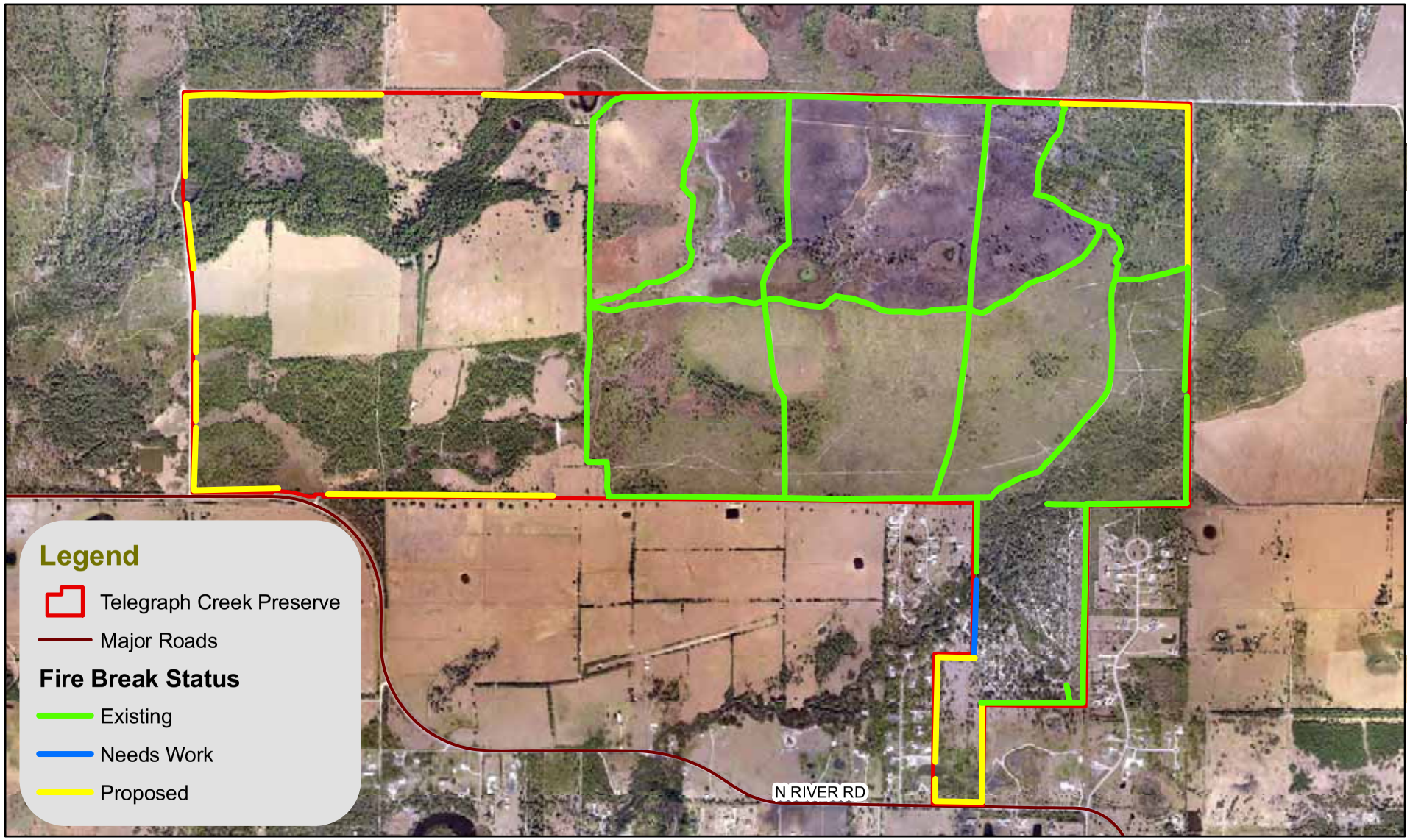
Assess cattle lease

Staff will evaluate the cattle lease during site inspections to determine if the cattle are having any negative effects on the natural plant communities, soils or water quality. The leased sections have a long history of cattle grazing and there is very little disturbance to the natural plant communities. If C20/20 staff determines the cattle are negatively impacting the Preserve, staff will meet with the Licensee to determine methods to lessen the impacts of cattle and determine if the lease should be continued, altered or terminated.

Change Zoning and Future Land Use categories

Staff will coordinate with LCDP staff to change the zoning and future land use categories for TCP. All zoning designations will be changed to "Environmentally Critical" from "Agriculture" and future land use designations will be modified to either "Conservation Lands – Uplands" or Conservation Lands - Wetlands."

Figure 29: Fire Breaks Map



Telegraph Creek Preserve

0 1,000 2,000 4,000 6,000 Feet

M:\GISLAYERS\Projects\Parks_Rec\
C2020\Telegraph_Creek_Preserve\TCP_LSP_2010\TCP_Fire_Breaks.mxd
Map Prepared On: 11/19/2010 by lwewerka@leegov.com

This is not a survey. Land Stewardship Staff has prepared this map for informational and planning purposes.

Public Use

Infrastructure improvements for public access

Facilities will include primitive trailheads, hiking and equestrian trails and kiosks will be located in the vicinity of the entrance areas.

Volunteers

Assist volunteer group(s)

The LSOM identifies the Land Stewardship Volunteer Program's mission statement as:

> *To aid in the management and preservation of Lee County resource-based public parks and preserves and to provide volunteers with rewarding experiences in nature.*

The Lee County Bird Patrol volunteer group has expressed an interest in performing bird monitoring surveys at TCP. The Preserve has a volunteer that checks fences, picks up trash and searches for select invasive exotic plant species.

If there is interest from the community to form a volunteer group, staff will work with them to assist with the many diverse stewardship activities that will be associated with this Preserve, such as trail maintenance, wildlife monitoring and other land stewardship projects.

The following "Prioritized Projected Timetable for Implementation" is based on obtaining necessary funding for numerous land stewardship projects. Implementation of these goals may be delayed due to changes in staff, extreme weather conditions or a change in priorities on properties managed by Lee County.

VII. PROJECTED TIMETABLE FOR IMPLEMENTATION

Management Activity	Jan-11	April-11	July-11	Oct-11	Jan-12	April-12	July-12	Oct-12	Jan-13	April-13	July-13	Oct-13	Jan-14	April-14	July-14	Oct-14	Jan-15	April-15	July-15	2016 or later
Natural Resource Management																				
Mechanical tree and brush reduction																				
Reduce vertical structure of vegetation								MU 6	→							MU 5	→			MU 1
Rollerchopping/forestry mowing of understory												MU 6,7	→			MU 1,3,5	→			
Pine thinning								X												
Prescribed fire management	On-going	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→	→
Install firelines													X							
Conduct prescribed burning																				
Exotic plant control/maintenance																				
Initial treatment					MU 8,9			MU 7												MU 1,3,5
Follow-up treatment				MU 6						MU 8,9		MU 7								
Habitat restoration																				
Washout and erosion control					X															
Hydrologic and spoil restoration																				X
Pasture restoration																				X
Maintenance (On-going/Annual)																				
Exotic animal removal						X														
Fire break mow/disk				X				X				X				X				X
Evaluate cattle leases			X				X				X				x				X	
Outside Consultants																				
Environmental/Engineering	X																			

Management Activity	Jan-11	April-11	July-11	Oct-11	Jan-12	April-12	July-12	Oct-12	Jan-13	April-13	July-13	Oct-13	Jan-14	April-14	July-14	Oct-14	Jan-15	April-15	July-15	2016 or later
Public Recreation																				
Facilities design/Permitting			East Trailhead and Culverts				West Trailhead and Culverts													
Install trailheads					East				West											
Installation of hiking/equestrian trails						BJP Connector Trail			West Trails							X				
Overall Protection																				
Trash removal							X													
Removal of selected interior fencing																				X
Renovation of storage building								X												
Change Zoning or Land Use categories				LU																Zoning
Fence installation				MU 8,9																
Volunteers						X														

VIII. FINANCIAL CONSIDERATIONS

There is a management fund established in perpetuity for all C20/20 preserves. Monies from this fund primarily serve to meet the operational needs of the Management section of the C20/20 Program, but a certain amount of this trust fund will be set aside for planned restoration projects.

Proceeds from future pine tree thinning will be utilized on site to augment activities listed in the Management Action Plan.

Other possible funding for exotic plant removal and restoration projects may be requested through grants from agencies such as SFWMD, FDEP and USFWS or include additional mitigation opportunities. Expenditures to date and projected and costs and funding sources are listed in Appendix F.

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X. APPENDICES

Appendix A: Plant Species List

Appendix B: Wildlife Species List

Appendix C: Cattle License

Appendix D: Legal Descriptions

Appendix E: Partnership Agreement with FDOF

Appendix F: Expended and Projected Costs and Funding Sources

Appendix A: Plant Species List

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Cladoniaceae (deer lichens)						
Cladina sp.	deer lichen	native				
Family: Blechnaceae (mid-sorus fern)						
Blechnum serrulatum	swamp fern	native				
Family: Dennstaedtiaceae (cuplet fern)						
Pteridium aquilinum	braken fern	native				
Family: Osmundaceae (royal fern)						
Osmunda regalis	royal fern	native		CE	R	
Family: Polypodiaceae (polypody)						
Phlebodium aureum	golden polypody	native				
Pleopeltis polypodioides	resurrection fern	native				
Family: Psilotaceae (whisk-fern)						
Psilotum nudum	whisk-fern	native				
Family: Pteridaceae (brake fern)						
Acrostichum danaeifolium	giant leather fern	native				
Family: Schizaeaceae (curly-grass)						
Lygodium microphyllum	small-leaf climbing fern	exotic	I			
Family: Thelypteridaceae (marsh fern)						
Thelypteris kunthii	widespread maiden fern	native				
Family: Vittariaceae (shoestring fern)						
Vittaria lineata	shoestring fern	native				
Family: Cupressaceae (cedar)						
Taxodium distichum	bald cypress	native				
Family: Pinaceae (pine)						
Pinus elliottii var. densa	south Florida slash pine	native				
Family: Alismataceae (water plantain)						
Sagittaria graminea	grassy arrowhead	native				
Sagittaria lancifolia	bulltongue arrowhead	native				
Family: Amaryllidaceae (amaryllis)						
Crinum americanum	string-lily	native				
Zephyranthes simpsonii	redmargin zephyrlily	native		T	I	G2G3/S2
Family: Arecaceae (palm)						
Sabal palmetto	cabbage palm	native				
Serenoa repens	saw palmetto	native				
Family: Bromeliaceae (pineapple)						
Tillandsia fasciculata var. densispica	cardinal airplant	native		E		
Tillandsia recurvata	ball-moss	native				
Tillandsia setacea	southern needleleaf	native				
Tillandsia usneoides	Spanish-moss	native				
Tillandsia utriculata	giant airplant	native		E		
Family: Commelinaceae (spiderwort)						
Callisia ornata	Florida scrub roseling	native			I	
Commelina erecta	whitemouth dayflower	native			I	

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Cyperaceae (sedge)						
Cladium jamaicense	Jamaica swamp sawgrass	native				
Cyperus articulatus	jointed flatsedge	native			I	
Cyperus haspan	haspan flatsedge	native				
Cyperus ligularis	swamp flatsedge	native				
Cyperus polystachyos	manyspikeflatsedge	native				
Cyperus surinamensis	tropical flatsedge	native				
Eleocharis baldwinii	roadgrass	native			R	
Fimbristylis cymosa	hurricanegrass	native				
Fuirena pumila	dwarf umbrellasedge	native			I	
Fuirena scirpoidea	southern umbrellasedge	native			R	
Rhynchospora colorata	starrush whitetop	native				
Rhynchospora corniculata	shortbristle horned beaksedge	native			I	
Rhynchospora inundata	Narrowfruit horned beaksedge	native			R	
Rhynchospora fascicularis	fascicled beaksedge	native			R	
Rhynchospora nitens	shortbeak beaksedge	native			R	
Rhynchospora odorata	fragrant beaksedge	native			R	
Rhynchospora plumosa	plumed beaksedge	native			R	
Scirpus tabernaemontani	softstem bulrush	native				
Family: Eriocaulaceae (pipewort)						
Lachncaulon anceps	whitehead bogbutton	native			R	
Family: Haemodoraceae (blootwort)						
Lachnanthes caroliana	Carolina redroot	native				
Family Iridaceae (iris)						
Iris hexagona	dixie iris	native			I	
Sisyrinchium angustifolium	narrowleaf blue-eyed grass	native			R	
Family: Juncaceae (rush)						
Juncus marginatus	shore rush	native			R	
Juncus megacephalus	bighead rush	native			R	
Juncus roemerianus	needlerush	native			R	
Family: Marantaceae (arrowroot)						
Thalia geniculata	alligatorflag	native				
Family: Orchidaceae (orchids)						
Spiranthes praecox	greenvein ladiestresses	native			CI	
Spiranthes vernalis	spring ladiestresses	native			R	

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Poaceae (grass)						
Amphicarpum muhlenbergianum	blue maidencane	native			R	
Andropogon glomeratus var. glaucopsis	purple bluestem	native			R	
Andropogon glomeratus var. pumilus	common bushy bluestem	native				
Andropogon virginicus var. glaucus	chalky bluestem	native			R	
Andropogon virginicus var. virginicus	broomsedge bluestem	native			I	
Aristida purpurascens	arrowfeather threeawn	native				
Aristida spiciformis	bottlebrush threeawn	native			R	
Aristida stricta var. beyrichiana	wiregrass	native				
Bothriochloa pertusa	pitted beardgrass	exotic				
Coelorachis rugosa	wrinkled jointtailgrass	native			R	
Cynodon dactylon	bermudagrass	exotic				
Dichantheleum dichotomum	cypress witchgrass	native			R	
Dichanthelium ensifolium var. ensifolium	cypress witchgrass	native			I	
Dichanthelium portoricense	hemlock witchgrass	native				
Dichanthelium strigosum var. glabrescens	roughhair witchgrass	native				
Digitaria ciliaris	southern crabgrass	native				
Digitaria filiformis var filiformis	slender crabgrass	native			I	
Eragrostis atrovirens	thalia lovegrass	exotic				
Eragrostis bahiensis	bahia lovegrass	exotic				
Eragrostis ciliaris	gophertail lovegrass	native				
Eragrostis elliottii	Elliott's lovegrass	native				
Eragrostis virginica	coastal lovegrass	native			I	
Eustachys glauca	saltmarsh fingergrass	native				
Eustachys petraea	pinewoods fingergrass	native				
Hemarthria altissima	limpograss	exotic	II			
Imperata brasiliensis	Brazilian satintail	native				
Imperata cylindrica	cogongrass	exotic	I			
Muhlenbergia capillaris	hairawn muhly	native				
Panicum hemitomon	maidencane	native				
Panicum hians	gaping panicum	native			R	
Panicum repens	torpedograss	exotic	I			
Panicum rigidulum	redtop panicum	native				
Panicum virgatum	switchgrass	native				
Paspalum monostachyum	gulfdune paspalum	native			R	
Paspalum notatum	bahia grass	exotic				
Paspalum setaceum	thin paspalum	native				
Paspalum urvillei	vaseygrass	exotic				
Phragmities australis	common reed	native			R	
Setaria parviflora	knotroot foxtail	native				
Sorghastrum secondum	lopsided indiangrass	native				
Sporobolus junceus	pineywoods dropseed	native				
Spartina bakeri	sand cordgrass	native				
Tripsacum dactyloides	Fakahatcheegrass	native			R	
Family : Pontederiaceae (pickerelweed)						
Eichhornia crassipes	common water-hyacinth	exotic	I			
Pontederia cordata	pickerelweed	native				
Family: Smilacaceae (smilax)						
Smilax auriculata	earleaf greenbriar	native				
Smilax bona-nox	saw greenbriar	native			R	
Smilax laurifolia	laurel greenbriar	native				

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Typhaceae (cattail)						
Typha latifolia	broadleaf cattail	native				
Family: Acanthaceae (acanthus)						
Elytraria caroliniensis var. caroliniensis	Carolina scalystem	native			CI	
Justicia angusta	pineland waterwillow	native			R	
Ruellia caroliniensis	Carolina wild petunia	native			I	
Ruellia ciliosa	ciliate wild petunia	native				
Family: Adoxaceae (moschatel)						
Viburnum obovatum	Walter's viburnum	native				
Family: Anacardiaceae (cashew)						
Rhus copallinium	winged sumac	native				
Schinus terebinthifolius	Brazilian pepper	exotic	I			
Toxicodendron radicans	eastern poison ivy	native				
Family: Annonaceae (custard-apple)						
Annona glabra	pondapple	native				
Asimina reticulata	netted pawpaw	native				
Family: Apiaceae (carrot)						
Cicuta maculata	spotted water hemlock	native			I	
Eryngium baldwinii	Baldwin's eryngo	native			R	
Ptilimnium capillaceum	mock bishopsweed	native				
Family: Apocynaceae (dogbane)						
Asclepias longifolia	longleaf milkweed	native			R	
Asclepias pedicellata	Savannah milkweed	native			I	
Catharanthus roseus	Madagascar periwinkle	exotic				
Family: Aquifoliaceae (holly)						
Ilex cassine	dahoon	native				
Ilex glabra	gallberry	native				
Family: Araliaceae (ginseng)						
Centella asiatica	spadeleaf					
Hydrocotyle umbellata	manyflower marshpennywort	native			R	
Schefflera actinophylla	Australian umbrella tree	exotic	I			

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Asteraceae (aster)						
Bidens alba	beggerticks	native				
Carphephorus corymbosus	Florida paintbrush	native			R	
Chaptalia tomentosa	pineland daisy	native			R	
Cirsium horridulum	purple thistle	native				
Cirsium nuttallii	Nuttall's thistle	native			I	
Conoclinium coelestinum	blue mistflower	native				
Coreopsis leavenworthii	Leavonworth's tickseed	native				
Elephantopus elatus	tall elephantsfoot	native			R	
Emilia fosbergii	Florida tasselflower	exotic				
Emilia sonchifolia	lilac tasselflower	native				
Erigeron quercifolius	oakleaf fleabane	native				
Eupatorium capillifolium	dogfennel	native				
Flaveria linearis	narrowleaf yellowtops	native				
Gamochaeta antillana	delicate everlasting	native				
Helenium pinnatifidum	southeastern sneezeweed	native			R	
Hieracium megacephalon	coastalplain hawkweed	native				
Lygodesmia aphylla	rose-rush	native			R	
Mikania cordifolia	Florida Keys hempvine	native			R	
Mikania scandens	climbing hempvine	native				
Pityopsis graminifolia	narrowleaf silkgrass	native				
Pluchea odorata	sweetscent	native				
Pluchea rosea	rosy camphorweed	native				
Pterocaulon pycnostachyum	blackroot	native				
Rudbeckia hirta	blackeyed susan	native			R	
Solidago odora var. chapmanii	Chapman's goldenrod	native				
Tridax procumbens	coatbuttons	native				
Vernonia blodgettii	Florida ironweed	exotic			R	
Family: Bignoniaceae (trumpet creeper)						
Campsis radicans	trumpet creeper	native			CI	
Family: Boraginaceae (borage)						
Heliotropium polyphyllum	pineland heliotrope	native				
Family: Campanulaceae (bellflower)						
Campanula floridana	Florida bellflower	native			I	
Lobelia feayana	bay lobelia	native			I	
Family: Caryophyllaceae (pink)						
Stipulicida setacea	pineland scalypink	native			R	
Family: Casuarinaceae (sheoak)						
Casuarina equisetifolia	Australian-pine	exotic	I			
Family: Cistaceae (rockrose)						
Helianthemum nashii	Florida scrub frostweed	native				
Family: Clusiaceae (mangosteen)						
Hypericum cistifolium	roundpod St. John's-wort	native				
Hypericum fasciculatum	peelbark St. John's-wort	native			R	
Hypericum hypericoides	St. Andrew's-Cross	native				
Hypericum mutilum	dwarf St. John's-wort	native			I	
Hypericum myrtifolium	myrtleleaf St. John's-wort	native			CI	
Hypericum reductum	Atlantic St. John's-wort	native			R	
Hypericum tetrapetalum	fourpetal St. John's-wort	native				

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Convolvulaceae (morning-glory)						
Evolvulus sericeus	silver dwarf morning-glory	native				
Ipomoea sagittata	saltmarsh morning-glory	native				
Family: Droseraceae (sundew)						
Drosera capillaris	pink sundew	native			R	
Family Ebenaceae (ebony)						
Diospyros virginiana	common persimmon	native			R	
Family: Euphorbiaceae (spurge)						
Cnidoscolus stimulosus	tread softly	native				
Ricinus communis	castorbean	exotic	II			
Stillingia sylvatica	queensdelight	native			R	
Family: Ericaceae (heath)						
Bejaria racemosa	tarflower	native			R	
Ceratiola ericoides	Florida rosemary	native			R	
Lyonia fruticosa	coastalplain staggerbush	native				
Lyonia lucida	fetterbush	native				
Vaccinium arboreum	sparkleberry	native			CI	
Vaccinium darrowii	Darrow's blueberry	native				
Vaccinium myrsinites	shiny blueberry	native				
Vaccinium stamineum	deerberry	native				
Family: Fabaceae (pea)						
Chamaecristia fasciculata	partridge pea	native				
Erythrina herbacea	coralbean	native				
Galactia elliottii	Elliott's milkpea	native			R	
Macroptilium lathyroides	wild bushbean	exotic				
Vicia acutifolia	fourleaf vetch	native				
Family: Fagaceae (beech)						
Quercus chapmanii	Chapman's oak	native				
Quercus elliottii	running oak	native				
Quercus geminata	sand live oak	native				
Quercus laurifolia	laurel oak	native				
Quercus minima	dwarf live oak	native			R	
Quercus myrtifolia	myrtle oak	native				
Quercus virginiana	Virginia live oak	native				
Family: Gentianaceae (gentian)						
Sabatia brevifolia	shortleaf rosegentian	native			I	
Sabatia stellaris	rose-of-plymouth					
Family: Haloragaceae (watermilfoil)						
Proserpinaca palustris	marsh mermaidweed	native			R	
Proserpinaca pectinata	combleaf mermaidweed	native			R	
Family: Hydroleaceae (false fiddleleaf)						
Hydrolea corymbosa	skyflower	native			R	
Family: Iteaceae (sweetspire)						
Itea virginica	Virginia willow	native				
Family: Lamiaceae (mint)						
Hyptis alata	musky mint	native				
Piloblephis rigida	wild pennyroyal	native			R	
Salvia lyrata	lyreleaf sage	native			CI	
Trichostema dichotomum	forked bluecurls	native				
Family: Lauraceae (laurel)						
Persea palustris	swamp bay	native				

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Lentibulariaceae (bladderwort)						
Pinguicula pumila	small butterwort	native			R	
Family: Linaceae (flax)						
Linum medium	stiff yellow flax	native			R	
Family: Loganiaceae (logania)						
Mitreola petiolata	lax hornpod	native				
Mitreola sessilifolia	swamp hornpod	native			R	
Family: Lythraceae (loosestrife)						
Lagerstroemia indica	crapemyrtle	exotic				
Lythrum alatum	winged loosestrife	native			R	
Family: Malvaceae (mallow)						
Melochia spicata	bretonica peluda	native			I	
Urena lobata	caesarweed	native	II			
Family: Myrsinaceae (myrsine)						
Rapanea punctata	myrsine	native				
Family: Myricaceae (bayberry)						
Myrica cerifera	wax myrtle	native				
Family: Myrtaceae (myrtle)						
Eugenia uniflora	Surinam cherry	exotic	I			
Melaleuca quinquenervia	punktree	exotic	I			
Rhodomyrtus tomentosa	rose myrtle	exotic	I			
Family: Nymphaeaceae (waterlily)						
Nuphar advena	spatterdock	native				
Family: Olacaceae (olax)						
Ximenia americana	hog plum	native				
Family: Oleaceae (olive)						
Fraxinus caroliniana	pop ash	native			R	
Family: Onagraceae (eveningprimrose)						
Ludwigia peruviana	peruvian primrosewillow	exotic	I			
Ludwigia repens	creeping primrosewillow	native				
Family: Orobanchaceae (broomrape)						
Buchnera americana	American bluehearts	native				
Family: Oxalidaceae (woodsorrel)						
Oxalis corniculata	common yellow woodsorrel	native				
Family: Polygalaceae (milkwort)						
Polygala balduinii	Baldwin's milkwort	native			R	
Polygala boykinii	Boykin's milkwort	native			R	
Polygala grandiflora	showy milkwort	native				
Polygala incarnata	procession flower	native			R	
Polygala lutea	orange milkwort	native			I	
Polygala nana	candyroot	native			R	
Polygala setacea	coastalplain milkwort	native			I	
Family: Polygonaceae (buckwheat)						
Polygonum punctatum	dotted smartweed	native				
Family: Primulaceae (primrose)						
Samolus ebracteatus	water pimpernel	native				
Family: Proteaceae (protea)						
Grevillea robusta	silkoak	exotic				
Family: Ranunculaceae (buttercup)						
Clematis baldwinii	pine-hyacinth	native			R	

Plant Species List for Telegraph Creek Preserve

Scientific Name	Common Name	Status	EPPC	FDA	IRC	FNAI
Family: Rosaceae (rose)						
Rubus argutus	sawtooth blackberry	native				
Family: Rubiaceae (madder)						
Cephalanthus occidentalis	common buttonbush	native				
Houstonia procumbens	innocence	native			R	
Psychotria nervosa	wild coffee	native				
Psychotria sulzneri	shortleaf wild-coffee	native				
Spermacoce verticillata	shrubby false buttonweed	exotic				
Family: Rutaceae (citrus)						
Citrus sinensis	orange	exotic				
Family: Salicaceae (willow)						
Salix caroliniana	Carolina willow	native				
Family: Sapindaceae (soapberry)						
Acer rubrum	red maple					
Family: Sapotaceae (sapodilla)						
Sideroxylon reclinatum	Florida bully	native			R	
Family: Solanaceae (nightshade)						
Solanum viarum	tropical soda apple	exotic	I			
Family: Urticaceae (nettle)						
Boehmeria cylindrica	false nettle	native				
Family: Verbenaceae (vervain)						
Callicarpa americana	American beautyberry	native				
Phyla nodiflora	capeweed	native				
Family: Veronicaceae (speedwell)						
Bacopa monnieri	herb-of-grace	native				
Gratiola hispida	rough hedgehyssop	native			I	
Lantana camara	lantana	exotic	I			
Linaria canadensis	Canada toadflax	native			R	
Lindernia grandiflora	Savannah false pimpernel	native			I	
Mecardonia acuminata	axilflower	native				
Family: Violaceae (violet)						
Viola lanceolata	bog white violet	native			I	
Family: Viscaceae (mistletoe)						
Phoradendron leucarpum	oak mistletoe	native			CI	
Family: Vitaceae (grape)						
Ampelopsis arborea	peppervine	native				
Parthenocissus quinquefolia	Virginia creeper	native				
Vitis shuttleworthii	calloose grape	native			R	
Vitis rotundifolia	muscadine					

Key

Florida EPPC Status

I = species that are invading and disrupting native plant communities
II = species that have shown a potential to disrupt native plant communities

FDACS (Florida Department of Agriculture and Consumer Services)

E = Endangered
T = Threatened
CE = Commercially Exploited

IRC (Institute for Regional Conservation)

CI = Critically Imperiled
I = Imperiled
R = Rare

FNAI (Florida Natural Areas Inventory)

G= Global Status
T= Threatened
CE= Commercially Exploited

1= Critically imperiled because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerbility to extinction due to some natural or man-made factor.
2= Imperiled because of rarity (6 to 20 occurrences or less than 3000 individuals) or because of vulnerbility to extinction due to some natural or man-made factor.
3= Either very rare and local throughout its range (21-200 occurences or less than 10,000 individuals) or found locally in a restricted range or vulnerable to extinction from other factors.
4= Apparently secure
5= Demonstrably secure

Appendix B: Wildlife Species List

Wildlife Species List for Telegraph Creek Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
MAMMALS				
Family: Didelphidae (opossums)				
Didelphis virginiana	Virginia opossum			
Family: Dasypodidae (armadillos)				
Dasypus novemcinctus	nine-banded armadillo *			
Family: Sciuridae (squirrels and their allies)				
Sciurus carolinensis	eastern gray squirrel			
Family: Muridae (mice and rats)				
Sigmodon hispidus	hispid cotton rat			
Family: Leporidae (rabbits and hares)				
Sylvilagus palustris	marsh rabbit			
Sylvilagus floridanus	eastern cottontail			
Family: Felidae (cats)				
Puma concolor coryi	Florida panther	E	E	G5T1/S1
Lynx rufus	bobcat			
Family: Canidae (wolves and foxes)				
Canis latrans	coyote			
Urocyon cinereoargenteus	common gray fox			
Family: Procyonidae (raccoons)				
Procyon lotor	raccoon			
Family: Mustelidae (weasels, otters and relatives)				
Lutra canadensis	northern river otter			
Family: Suidae (old world swine)				
Sus scrofa	feral hog *			
Family: Cervidae (deer)				
Odocoileus virginianus	white-tailed deer			
BIRDS				
Family: Phasianidae (pheasant, grouse, turkeys and their allies)				
Subfamily: Meleagridinae (turkeys)				
Meleagris gallopavo	wild turkey			
Family: Odontophoridae (new world quails)				
Colinus virginianus	northern bobwhite			
Family: Phalacrocoracidae (cormorants)				
Phalacrocorax auritus	double-crested cormorant			
Family: Anhingidae (anhingas)				
Anhinga anhinga	anhinga			
Family: Ardeidae (herons, egrets, bitterns)				
Ardea herodius	great blue heron			
Ardea alba	great egret			G5/S4
Egretta thula	snowy egret	SSC		G5/S3
Egretta caerulea	little blue heron	SSC		G5/S4
Egretta tricolor	tricolored heron	SSC		G5/S4
Bubulcus ibis	cattle egret			
Butorides virescens	green heron			
Nycticorax nycticorax	black-crowned night heron			G5/S3
Family: Threskiornithidae (ibises and spoonbills)				
Eudocimus albus	white ibis	SSC		G5/S4
Plegadis falcinellus	glossy ibis			G5/S3
Family: Ciconiidae (storks)				
Mycteria americana	wood stork	E	E	G4/S2
Family: Cathartidae (new world vultures)				
Coragyps atratus	black vulture			
Cathartes aura	turkey vulture			

Wildlife Species List for Telegraph Creek Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Family: Accipitridae (hawks, kites, accipiters, harriers, eagles)				
Subfamily: Elaninae and Milvinae (kites)				
Elanoides forficatus	swallow-tailed kite			G5/S2
Elanus leucurus	white-tailed kite			
Subfamily: Buteoninae (buzzard hawks and eagles)				
Hailaeetus leucocephalus	bald eagle	T		G5/S3
Subfamily: Circinae (harriers)				
Circus cyaneus	northern harrier			
Subfamily: Accipitrinae (bird hawks)				
Accipiter striatus	sharp-shinned hawk			
Accipiter cooperii	Cooper's hawk			G5/S3
Subfamily: Buteoninae (buzzard hawks and eagles)				
Buteo lineatus	red-shouldered hawk			
Buteo jamaicensis	red-tailed hawk			
Family: Falconidae (falcons)				
Subfamily: Falconinae (falcons)				
Falco sparverius	American kestrel			
Falco columbarius	merlin			G5/S2
Family: Gruidae (cranes)				
Grus canadensis pratensis	Florida sandhill crane	T		G5T2T3/S2S3
Family: Charadriidae (plovers)				
Charadrius vociferus	killdeer			
Family: Scolopacidae (sandpipers and phalaropes)				
Gallinago gallinago	common snipe			
Family: Columbidae (pigeons and doves)				
Zenaida macroura	mourning dove			
Columbina passerina	common ground-dove			
Family: Strigidae (true owls)				
Otus asio	eastern screech owl			
Bubo virginianus	great horned owl			
Athene cunicularia	burrowing owl			
Strix varia	barred owl			
Family: Caprimulgidae (goatsuckers)				
Chordeiles minor	common nighthawk			
Caprimulgus carolinensis	chuck-will's-widow			
Family: Alcedinidae (kingfishers)				
Ceryle alcyon	belted kingfisher			
Family: Picidae (woodpeckers)				
Melanerpes erythrocephalus	red-headed woodpecker			
Melanerpes carolinus	red-bellied woodpecker			
Sphyrapicus varius	yellow-bellied sapsucker			
Picoides pubescens	downy woodpecker			
Picoides villosus	hairy woodpecker			G5/S3
Colaptes auratus	northern flicker			
Dryocopus pileatus	pileated woodpecker			
Family: Tyrannidae (tyrant flycatchers)				
Sayornis phoebe	eastern phoebe			
Myiarchus crinicensis	great-crested flycatcher			
Tyrannus dominicensis	gray kingbird			
Family: Laniidae (shrikes)				
Lanius ludovicianus	loggerhead shrike			
Family: Vireonidae (vireos)				
Vireo griseus	white-eyed vireo			
Vireo solitarius	blue-headed vireo			

Wildlife Species List for Telegraph Creek Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Family: Corvidae (crows, jays, etc.)				
Cyanocitta cristata	blue jay			
Aphelocoma coerulescens	Florida scrub-jay	T	T	G2/S2
Corvus brachyrhyncos	American crow			
Corvus ossifragus	fish crow			
Family: Hirundinidae (swallows)				
Tachycineta bicolor	tree swallow			
Family: Paridae (chickadees and titmice)				
Baeolophus bicolor	tufted titmouse			
Family: Troglodytidae (wrens)				
Thryothorus ludovicianus	Carolina wren			
Troglodytes aedon	house wren			
Cistothorus palustris	marsh wren			
Family: Sylvidae (gnatcatchers)				
Polioptila caerulea	blue-gray gnatcatcher			
Family: Turdidae (thrushes)				
Sialia sialis	eastern bluebird			
Turdus migratorius	American robin			
Family: Mimidae (mockingbirds and thrashers)				
Dumetella carolinensis	gray catbird			
Mimus polyglottos	northern mockingbird			
Toxostoma rufum	brown thrasher			
Family: Sturnidae (starlings)				
Sturnus vulgaris	European starling *			
Family: Parulidae (wood-warblers)				
Parula americana	northern parula			
Dendroica petechia	yellow warbler			
Dendroica caerulescens	black-throated blue warbler			
Dendroica coronata	yellow-rumped warbler			
Dendroica pinus	pine warbler			
Dendroica discolor	prairie warbler			
Dendroica palmarum	palm warbler			
Mniotilta varia	black-and-white warbler			
Setophaga ruticilla	American redstart			
Geothlypis tristis	common yellowthroat			
Family: Emberizine (sparrows and their allies)				
Pipilo erythrophthalmus	eastern towhee			
Aimophila aestivalis	Bachman's sparrow			G3/S3
Family: Cardinalidae (cardinals, some grosbeaks, new world buntings, etc.)				
Cardinalis cardinalis	northern cardinal			
Family: Icteridae (blackbirds, orioles, etc.)				
Agelaius phoeniceus	red-winged blackbird			
Sturnella magna	eastern meadowlark			
Quiscalus quiscula	common grackle			
Quiscalus major	boat-tailed grackle			
Molothrus ater	brown-headed cowbird			
REPTILES				
Family: Alligatoridae (alligator and caiman)				
Alligator mississippiensis	American alligator	SSC		G5/S4
Family: Kinosternidae (musk and mud turtles)				
Sternotherus odoratus	common musk turtle			
Kinosternon baurii	striped mud turtle			
Family: Emydidae (box and water turtles)				
Terrapene carolina bauri	Florida box turtle			

Wildlife Species List for Telegraph Creek Preserve

		Designated Status		
Scientific Name	**Common Name**	**FWC**	**FWS**	**FNAI**
Family: Testudinidae (gopher tortoises)				
Gopherus polyphemus	gopher tortoise	T		G3/S3
Family: Polychridae (anoles)				
Anolis carolinensis	green anole			
Anolis sagrei	brown anole *			
Family: Scincidae (skinks)				
Eumeces fasciatus	five-lined skink			
Family: Colubridae (colubrids)				
Coluber constrictor priapus	southern black racer			
Drymarchon corais couperi	eastern indigo snake	T	T	G3/S3
Elaphe guttata guttata	corn snake			
Elaphe obsoleta quadrivittata	yellow rat snake			
Family: Viperidae (vipers)				
Subfamily: Crotalinae (pit vipers)				
Crotalus adamanteus	eastern diamondback rattlesnake			G4/S3
AMPHIBIANS				
Family: Bufonidae (toads)				
Bufo quercicus	oak toad			
Family: Hylidae (treefrogs and their allies)				
Hyla cinerea	green treefrog			
Hyla femoralis	pine woods treefrog			
Hyla squirella	squirrel treefrog			

KEY:

FWC = Florida Fish & Wildlife Conservation Commission
FWS = U.S. Fish & Wildlife Service
E - Endangered
T - Threatened
SSC - Species of Special Concern

FNAI = Florida Natural Areas Inventory
G - Global rarity of the species
S - State rarity of the species
T - Subspecies of special population
1 - Critically imperiled
2 - Imperiled
3 - Rare, restricted or otherwise vulnerable to extinction
4 - Apparently secure
5 - Demonstratebly secure

*** = Non-native**

Appendix C: Cattle License

LICENSE AGREEMENT FOR CATTLE GRAZING

This AGREEMENT made this 26th day of August 2010, by and between LEE COUNTY, a political subdivision and charter county of the State of Florida, whose address is P.O. Box 398, Fort Myers, Florida 33902-0398, hereinafter referred to as "Licensor"; and Fred Lewis, an individual, whose address is 4692 SE Cecil Ave., Arcadia, FL 34266, referred to as "Licensee".

Licensor is the owner of property situated in Lee county and legally depicted and described in attached Exhibit A; and

Licensor, in consideration of the fees paid and the covenants and agreements set forth herein to be kept and performed by the Licensee, does hereby grant to the Licensee a license solely for the grazing of cattle on Licensor's lands as described as follows, to wit:

SEE EXHIBIT "B" ATTACHED HERETO AND MADE A PART HEREOF.

In further consideration of this Agreement, the parties agree as follows:

1. Licensee agrees to pay Licensor the total sum of $1,726.00, due by September 15th each year for the term of this License and to use the described property solely for cattle grazing.

2. This License is not assignable to any other party.

3. This License extends for an initial term of one year. The License may be renewed for one additional year if Licensor agrees; or, the License may be revoked by Licensor upon 30 days written notice. Upon expiration of the License, the Licensee must remove all cattle.

4. Licensee will not use the described lands for any other purpose other than cattle grazing.

5. Licensee will maintain the existing four strand barbed wire fence around the perimeter of the property with the exception of the road frontage. Road frontage fence will be maintained with five strand barbed wire during the term of this License. The perimeter fence must remain and is deemed the property of the Licensor. Internal or interior fencing installed by Licensee must be removed upon expiration of the lease or termination by either party. All holes from the fence posts must be filled by Licensee to the level of surrounding grade upon removal of internal or interior fencing.

6. Licensee agrees to keep the fence in an excellent state of repair at all times during the term of this Agreement.

7. The parties understand and agree that this Agreement may be canceled upon 48 hours written notice to the Licensee if any of Licensee's cattle are not kept within the confines of the property described in Exhibit "B."

8. Licensee covenants and agrees to file an annual personal property tax return with the County of Lee, State of Florida, as required by law.

9. All section corners, quarter corners, and other survey monuments lying in the premises will be properly flagged by the Licensor. Licensee agrees to bear any survey costs for resetting these monuments in the event they are disturbed by the Licensee in any way.

10. Licensee hereby indemnifies and releases the Licensor from any and all claims for damages to both persons and property as the result of the cattle grazing; and, holds Licensor harmless from all damages during the term of this Agreement to include all reasonable fees, costs and expenses incurred for litigation in any forum resulting from damage claimed by third parties as a result of the Licensee's use of the property described in Exhibit "B".

11. Licensee must obtain written approval from the Conservation 20/20 Land Stewardship Supervisor prior to performing any land clearing, controlled burns, fertilizing, exotic removal, chopping, chemical spraying, or other land management activities.

12. Licensee shall not exceed 150 head of cattle at any time.

13. The contact information for the parties is as follows:

Lee County, Licensor
Director of Parks and Recreation
3410 Palm Beach Boulevard
Fort Myers, FL 33916
239-533-7275

Fred E. Lewis
4692 SE Cecil Ave.
Arcadia, FL 34266
239-707-2681

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Witness: Denise Potter Fred E. Lewis, Licensee

Print Name: Denise Potter By: Fred E. Lewis

Witness: Jessica Lowery

Print Name: Jessica Lowery

Witness: Cynthia C. Mitton Lee County Parks and Recreation

Print Name: Cynthia C. Mitton David W. Harner, II, Deputy Director

Witness: Linda L Lullo

Print Name: LINDA L LULLO

Approved as to form:

By: _____
Lee County's Attorney's Office

[The Board of County Commissioners delegated authority to the Director of Parks and Recreation to enter short term leases/licenses for cattle grazing on Conservation 2020 lands and other lands managed by Lee County pursuant to Bluesheet #19990807 adopted on August 17, 1999 .]

Exhibit "A"

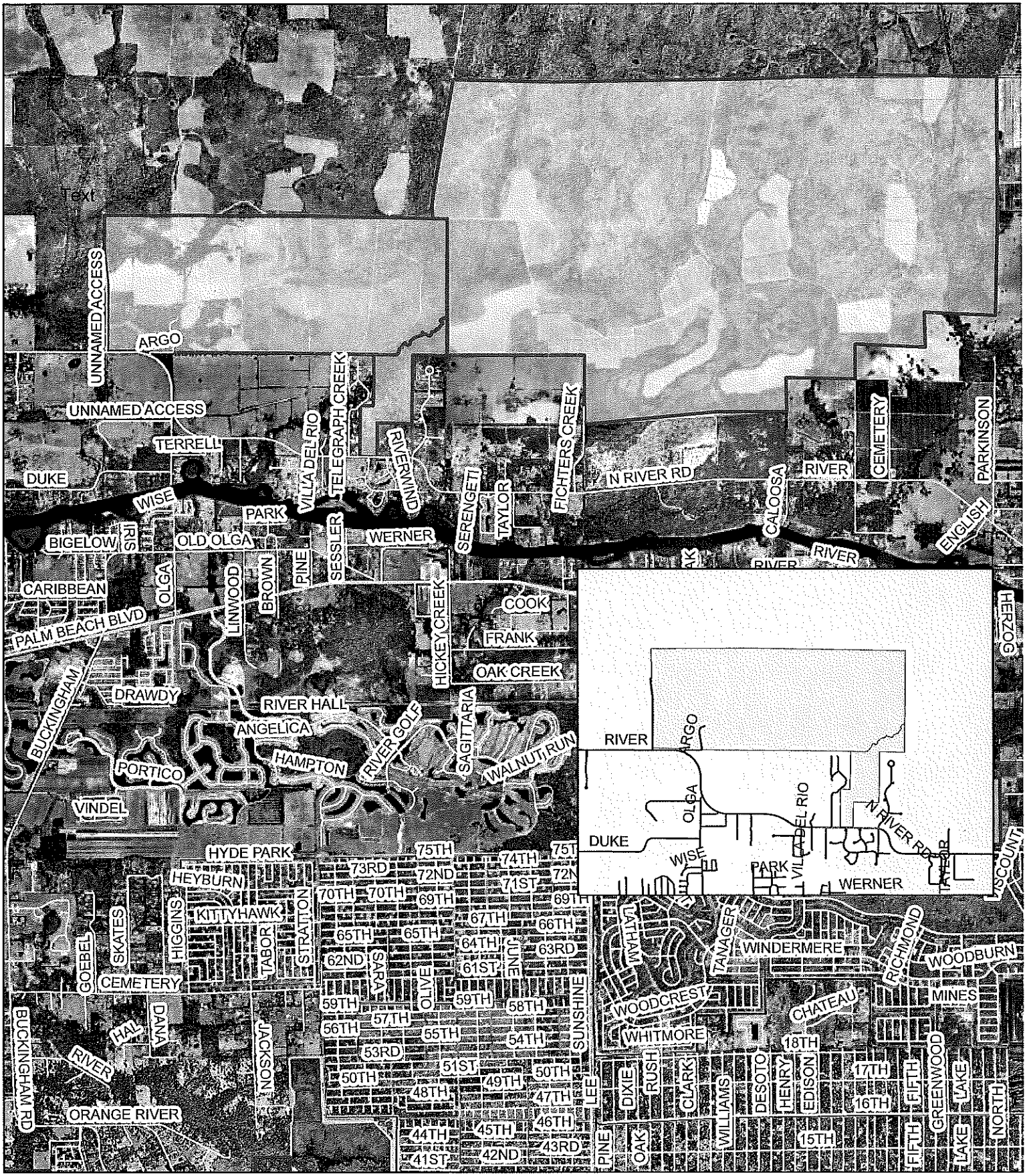
Conservation Lands Program, Project No. 8800
Parcels 236-2 and 412

LEGAL DESCRIPTION
AS PREPARED BY BANKS ENGINEERING, INC.

A TRACT OR PARCEL OF LAND SITUATED IN THE STATE OF FLORIDA, COUNTY OF LEE, LYING IN SECTIONS 9, 10, 11, AND 14, TOWNSHIP 43 SOUTH, RANGE 26 EAST, AND BEING FURTHER BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 9; THENCE S.89°51'43"E., ALONG THE NORTH LINE OF SAID SECTION 9, FOR 2649.83 FEET TO THE NORTHEAST CORNER OF SAID SECTION 9 AND THE NORTHWEST CORNER OF SAID SECTION 10; THENCE S.89°55'18"E., ALONG THE NORTH LINE OF SAID SECTION 10, FOR 5300.32 FEET TO THE NORTHEAST CORNER OF SAID SECTION 10 AND THE NORTHWEST CORNER OF SAID SECTION 11; THENCE S.89°35'05"E., ALONG THE NORTH LINE OF SAID SECTION 11, FOR 5284.32 FEET TO THE NORTHEAST CORNER OF SAID SECTION 11; THENCE S.00°11'21"W., ALONG THE EAST LINE OF SAID SECTION 11, FOR 5306.37 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 11; THENCE N.89°06'11"W., ALONG THE COMMON LINE BETWEEN SAID SECTIONS 11 AND 14, FOR 1327.76 FEET; THENCE S.00°45'55"W., ALONG THE EAST LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 14, FOR 2658.53 FEET; THENCE N.89°03'42"W., ALONG THE EAST-WEST QUARTER SECTION LINE OF SAID SECTION 14, FOR 1328.00 FEET; THENCE S.00°46'20"W., ALONG THE NORTH-SOUTH QUARTER SECTION LINE OF SAID SECTION 14, FOR 1322.95 FEET TO THE NORTH LINE OF NORTH RIVER ROAD AS MONUMENTED; THENCE N.88°57'11"W., ALONG SAID NORTH LINE, FOR 664.31 FEET; THENCE N.00°43'00"E., ALONG THE WEST LINE OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 14, FOR 1321.70 FEET; THENCE N.00°48'33"E., ALONG THE WEST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SAID SECTION 14, FOR 664.28 FEET; THENCE S.89°04'16"E., ALONG THE NORTH LINE OF SAID FRACTION OF SECTION 14, FOR 495.00 FEET; THENCE N.00°48'33"E., ALONG THE EAST LINE OF THE WEST 495.00 FEET OF THE NORTH THREE FOURTHS OF THE EAST HALF OF THE EAST HALF OF THE NORTHWEST QUARTER OF SAID SECTION 14, FOR 1993.09 FEET TO SAID COMMON LINE BETWEEN SECTIONS 11 AND 14; THENCE N.89°05'57"W., ALONG SAID COMMON LINE, FOR 2485.66 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 11 AND THE SOUTHEAST CORNER OF SAID SECTION 10; THENCE N.89°31'04"W., ALONG THE SOUTH LINE OF SAID SECTION 10, FOR 2645.81 FEET TO THE SOUTH QUARTER CORNER OF SAID SECTION 10; THENCE N.89°29'57"W., ALONG SAID SOUTH LINE, FOR 2646.06 FEET TO THE SOUTHWEST CORNER OF SAID SECTION 10 AND THE SOUTHEAST CORNER OF SAID SECTION 9; THENCE S.89°58'36"W., ALONG THE SOUTH LINE OF SAID SECTION 9, FOR 996.19 FEET TO AN INTERSECTION WITH THE NORTHERLY RIGHT OF WAY LINE OF NORTH RIVER ROAD, BEING A CURVE TO THE LEFT, HAVING: A RADIUS OF 1507.40 FEET, A CENTRAL ANGLE OF 17°43'46", A CHORD BEARING OF N.81°02'23"W. AND A CHORD LENGTH OF 464.59 FEET; THENCE NORTHWESTERLY ALONG SAID RIGHT OF WAY LINE AND THE ARC OF SAID CURVE, AN ARC LENGTH OF 466.45 FEET TO THE END OF SAID CURVE; THENCE S.00°15'38"W., ALONG SAID RIGHT OF WAY LINE, FOR 25.00 FEET; THENCE N.89°54'22"W., ALONG SAID RIGHT OF WAY LINE, FOR 1053.87 FEET; THENCE N.00°23'20"E., PARALLEL WITH AND 150.00 FEET EASTERLY OF (AS MEASURED ON A PERPENDICULAR) THE NORTH-SOUTH QUARTERSECTION LINE OF SAID SECTION 9, FOR 2611.86 FEET TO THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 9; THENCE N.00°02'52"W., FOR 1338.03 FEET TO THE SOUTHWEST CORNER OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 9; THENCE N.00°23'20"E., ALONG SAID NORTH-SOUTH QUARTER SECTION LINE OF SECTION 9, FOR 1330.74 FEET TO SAID NORTH QUARTER CORNER OF SECTION 9 AND THE POINT OF BEGINNING.

Exhibit B: Telegraph Creek Preserve site # 236-2 and 412



Cattle Lease Map

0 0.15 0.3 0.6 0.9 Miles

Exhibit B

S:\Terry\esri\C2020 ArcView\Other2020Maps
Cattle_Leases.mxd

Map Prepared On: 07/01/09 by sfurnari@leegov.com

This is not a survey. Land Stewardship Staff has

Appendix D: Legal Descriptions

INSTR # 2009000025715, Doc Type D, Pages 3, Recorded 02/02/2009 at 11:25 AM, Charlie Green, Lee County Clerk of Circuit Court, Deed Doc. D $111469.40 Rec. Fee $27.00 Deputy Clerk DMAYS

(6) 3pgs $27.00 $111469.40

Prepared by:
ALICIA GAYTON
Benderson Development Company, LLC
8441 Cooper Creek Blvd.,
University Park, Florida 34201

Return to:
CHICAGO TITLE INSURANCE CO
Attn: Cher Tauscher
495 State Road 436
Casselberry, FL 32707
(1008054550)

Parcel ID# 09-43-26-00-00002.0000
10-43-26-00-00002.0000
10-43-26-00-00003.0000
10-43-26-00-00004.0000
11-43-26-00-00001.0010
11-43-26-00-00001.0020

Acquisition approved by the Lee County Board of Commissioners' action on 11/18/2008 and accepted on behalf of the Board by Donna L. Mann on 1/30/2009 in accordance with Blue Sheet No. 20081371, A6B Project Consv Lands No. 8800 Parcels 236-2 & 412

WARRANTY DEED

THIS INDENTURE, made this 30TH day of January 2009, by and between **ADB-BUFFALO ASSOCIATES, LLC**, a Delaware limited liability company, as tenant in common with an undivided 43.75% interest, and **WILL-RIDGE ASSOCIATES, LLC**, a New York limited liability company, as tenant in common with an undivided 56.25% interest whose address is 8441 Cooper Creek Blvd., University Park, Florida 34201 (collectively the "Grantor") and **LEE COUNTY**, a Political Subdivision of the State of Florida, whose address is P.O. Box 398, Fort Myers, Florida 33902-0398 (the "Grantee").

WITNESSETH, that the said Grantor, for and in consideration of the sum of FIFTEEN MILLION NINE HUNDRED TWENTY FOUR THOUSAND ONE HUNDRED TWO and 00/100 Dollars ($15,924,102.00), and other valuable considerations to it in hand paid by the said Grantee, the receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed to the said Grantee, its successors and assigns forever, all of the following described land lying and being in Lee County, Florida, more particularly described as follows:

SEE LEGAL DESCRIPTION ATTACHED AS EXHIBIT "A"

TO HAVE AND TO HOLD the above-described premises, the improvements located thereon, and all rights, tenements, hereditaments, privileges, and easements appurtenant thereto, unto the said Grantee, its successors and assigns, in fee simple forever.

And the said Grantor does hereby fully warrant the title to said property, and will defend the same against the lawful claims of all persons.

It is the intention of the Grantor that the easement interests created by that certain Grant of Easement recorded in Official Records Book 545, Page 837 and in that certain Easement recorded in Official Records Book 2527, Page 2358, Public Records of Lee County, Florida, merge with the fee simple interest being conveyed herewith, thereby terminating and extinguishing said easements.

The property conveyed by this deed does NOT constitute the Homestead of the Grantor.

IN WITNESS WHEREOF, the said Grantor has executed this deed under seal on the date aforesaid.

Signed, sealed and delivered in the presence of:

Print name: ALICIA H. GAYTON

Print name: Kimberly J. Taylor

ADB-BUFFALO ASSOCIATES, LLC
A Delaware limited liability company

By: _____
David H. Baldauf, Manager

State of FLORIDA
County of MANATEE

Before me the undersigned authority this 16 day of January, 2009, personally appeared DAVID H. BALDAUF as Manager of ADB-Buffalo Associates, LLC, a Delaware limited liability company, on behalf of said company. He is personally known to me or has produced _____ as identification.

Print Name: _____
My Commission Expires: _____

ALICIA H. GAYTON
MY COMMISSION #DD645455
EXPIRES: MAR 31, 2011
Bonded through 1st State Insurance

Signed, sealed and delivered in the presence of:

Print name: ALICIA H. GAYTON

Print name: Kimberly J. Taylor

WILL-RIDGE ASSOCIATES, LLC
A New York limited liability company

By: _____
David H. Baldauf, Manager

State of FLORIDA
County of MANATEE

Before me the undersigned authority this 16 day of January, 2009 personally appeared DAVID H. BALDAUF as Manager of Will-Ridge Associates, LLC, a New York limited liability company, on behalf of said company. He is personally known to me or has produced _____ as identification.

Print Name: _____
My Commission Expires: _____

ALICIA H. GAYTON
MY COMMISSION #DD645455
EXPIRES: MAR 31, 2011
Bonded through 1st State Insurance

LEGAL DESCRIPTION
EXHIBIT "A"

PARCEL "A"

A TRACT OR PARCEL OF LAND SITUATED IN THE STATE OF FLORIDA, COUNTY OF LEE, LYING IN SECTIONS 9, 10, AND 11, TOWNSHIP 43 SOUTH, RANGE 26 EAST, BEING FURTHER BOUND AND DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTH QUARTER CORNER OF SAID SECTION 9; THENCE S.89°51'43"E. ALONG THE NORTH LINE OF SAID SECTION 9 FOR 2649.83 FEET TO THE NORTHEAST CORNER OF SAID SECTION 9 AND THE NORTHWEST CORNER OF SAID SECTION 10; THENCE S.89°55'18"E. ALONG THE NORTH LINE OF SAID SECTION 10 FOR 5300.32 FEET TO THE NORTHEAST CORNER OF SAID SECTION 10 AND THE NORTHWEST CORNER OF SAID SECTION 11; THENCE S.88°35'05"E. ALONG THE NORTH LINE OF SAID SECTION 11 FOR 5284.32 FEET TO THE NORTHEAST CORNER OF SAID SECTION 11; THENCE S.00°11'21"W. ALONG THE EAST LINE OF SAID SECTION 11 FOR 2653.19 FEET TO THE EAST QUARTER CORNER OF SAID SECTION 11; THENCE N.88°50'37"W. ALONG THE EAST WEST QUARTER SECTION LINE OF SAID SECTION 11 FOR 5297.63 FEET TO THE WEST QUARTER CORNER OF SAID SECTION 11 AND THE EAST QUARTER CORNER OF SAID SECTION 10; THENCE N.89°42'55"W. ALONG THE EAST WEST QUARTER SECTION LINE OF SAID SECTION 10 FOR 2647.97 FEET TO THE CENTER OF SAID SECTION 10; THENCE S.00°26'16"W. ALONG THE EAST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 10 FOR 2607.74 FEET TO AN INTERSECTION WITH A LINE 60 FEET NORTH OF AND PARALLEL WITH (AS MEASURED ON A PERPENDICULAR) THE SOUTH LINE OF SAID FRACTION; THENCE N.89°29'57"W. ALONG SAID PARALLEL LINE FOR 2646.11 FEET TO AN INTERSECTION WITH THE EAST LINE OF SAID SECTION 9; THENCE S.89°58'36"W. ALONG A LINE 60 FEET NORTH OF AND PARALLEL WITH (AS MEASURED ON A PERPENDICULAR) THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SAID SECTION 9 FOR 60.00 FEET; THENCE S.00°23'39"W. ALONG A LINE 60 FEET WEST OF AND PARALLEL WITH (AS MEASURED ON A PERPENDICULAR) THE EAST LINE OF SAID FRACTION FOR 60.00 FEET TO AN INTERSECTION WITH THE SOUTH LINE OF SAID FRACTION; THENCE S.89°58'36"W. ALONG SAID SOUTH LINE FOR 926.19 FEET TO AN INTERSECTION WITH THE NORTHERLY RIGHT-OF-WAY LINE OF NORTH RIVER ROAD (S.R. 78)THE SAME BEING AN INTERSECTION WITH A NON-TANGENT CURVE TO THE LEFT HAVING A RADIUS OF 1507.40 FEET AND TO WHICH POINT A RADIAL LINE BEARS N.17°49'24"E.; THENCE WESTERLY ALONG SAID CURVE AND SAID NORTHERLY LINE THROUGH A CENTRAL ANGLE OF 17°43'46" FOR 466.45 FEET; THENCE S.00°05'38"W. ALONG SAID NORTHERLY LINE FOR 25.00 FEET; THENCE N.89°54'22"W. ALONG SAID NORTHERLY LINE FOR 1053.87 FEET; THENCE N.00°23'20"E. PARALLEL WITH AND 150 FEET EASTERLY OF (AS MEASURED ON A PERPENDICULAR) THE NORTH SOUTH QUARTER SECTION LINE FOR 2611.86 FEET TO THE SOUTH LINE OF THE NORTH HALF OF SAID SECTION 9; THENCE N.06°02'52"W. FOR 1338.03 FEET TO THE SOUTHWEST CORNER OF THE NORTH HALF OF THE NORTHEAST QUARTER OF SAID SECTION 9; THENCE N.00°23'20"E. ALONG SAID NORTH SOUTH QUARTER SECTION LINE OF SAID SECTION 9 FOR 1330.74 FEET TO SAID NORTH QUARTER CORNER OF SECTION 9 AND THE POINT OF BEGINNING.

LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL:

A PORTION OF PARCEL SRD#110.1-R AS DESCRIBED IN THE FINAL JUDGMENT CASE NO. L-1870 RECORDED IN OFFICIAL RECORDS BOOK 439 AT PAGE 715 THROUGH 722 OF THE PUBLIC RECORDS OF LEE COUNTY, FLORIDA BEING FURTHER BOUND AND DESCRIBED AS FOLLOWS:

THE SOUTH 30 FEET OF THE WEST 104.36 FEET OF THE EAST 885.16 FEET OF THE SE1/4 OF SECTION 9, TOWNSHIP 43 SOUTH RANGE 26 EAST.

TOGETHER WITH:

PARCEL "B"

COMMENCING AT THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF SAID SECTION 11; THENCE S.00°11'21"W. ALONG THE EAST LINE OF SAID FRACTION FOR 1141 FEET MORE OR LESS TO THE CENTERLINE OF TELEGRAPH CREEK AND THE POINT OF BEGINNING; THENCE CONTINUE S.00°11'21"W. ALONG SAID EAST LINE FOR 1512 FEET MORE OR LESS TO THE SOUTHEAST CORNER OF SAID FRACTION; THENCE N.89°06'11"W. ALONG THE SOUTH LINE OF SAID FRACTION FOR 1974 FEET MORE OR LESS TO THE CENTERLINE OF SAID TELEGRAPH CREEK; THENCE NORTHEASTERLY ALONG SAID CENTERLINE TO THE POINT OF BEGINNING.

INSTR # 2009000025714, Doc Type D, Pages 3, Recorded 02/02/2009 at 11:25 AM, Charlie Green, Lee County Clerk of Circuit Court, Deed Doc. D $55831.30 Rec. Fee $27.00 Deputy Clerk DMAYS

(5) Supps $27.00
Surcharge $1.00
Doc $55831.30

Prepared by:
ALICIA GAYTON
Benderson Development Company, LLC
8441 Cooper Creek Blvd.,
University Park, Florida 34201

Return to:
CHICAGO TITLE INSURANCE CO
Attn: Cher Tauscher
495 State Road 436
Casselberry, FL 32707
(10080545SCT)

Parcel ID# 10-43-26-00-00001.0000
11-43-26-00-00001.0000
14-43-26-00-00002.1000

Acquisition approved by the Lee County Board of Commissioners' action on 11·18·2008 and accepted on behalf of the Board by _____ on 1/30/2009 in accordance with BLUE SHEET NO. 20081371 A&B Project CONSV. LAND #8900 Parcel 236-2 + 412

WARRANTY DEED

THIS INDENTURE, made this 30th day of January 2009, by and between Randall Benderson, Ronald Benderson and David H. Baldauf as Trustees under Trust Agreement dated October 14, 1985 known as the **BENDERSON 85-1 TRUST**, whose address is 8441 Cooper Creek Blvd., University Park, Florida 34201 (the "Grantor") and **LEE COUNTY**, a Political Subdivision of the State of Florida, whose address is P.O. Box 398, Fort Myers, Florida 33902-0398 (the "Grantee").

WITNESSETH, that the said Grantor, for and in consideration of the sum of SEVEN MILLION NINE HUNDRED SEVENTY THOUSAND EIGHT HUNDRED NINETY EIGHT and 00/100 Dollars ($7,975,898.00), and other valuable considerations to it in hand paid by the said Grantee, the receipt whereof is hereby acknowledged, has granted, bargained, sold and conveyed to the said Grantee, its successors and assigns forever, all of the following described land lying and being in Lee County, Florida, more particularly described as follows:

SEE LEGAL DESCRIPTION ATTACHED AS EXHIBIT "A"

TO HAVE AND TO HOLD the above-described premises, the improvements located thereon, and all rights, tenements, hereditaments, privileges, and easements appurtenant thereto, unto the said Grantee, its successors and assigns, in fee simple forever.

And the said Grantor does hereby fully warrant the title to said property, and will defend the same against the lawful claims of all persons.

It is the intention of the Grantor that the easement interests created by that certain Grant of Easement recorded in Official Records Book 545, Page 837 and in that certain Easement recorded in Official Records Book 2527, Page 2358, Public Records of Lee County, Florida, merge with the fee simple interest being conveyed herewith, thereby terminating and extinguishing said easements.

The property conveyed by this deed does NOT constitute the Homestead of the Grantor.

IN WITNESS WHEREOF, the said Grantor has executed this deed under seal on the date aforesaid.

Signed, sealed and delivered in the presence of:

Print name: ALICIA H. GAYTON

Print name: Kimberly J. Taylor

BENDERSON 85-1 TRUST

By: _____
David H. Baldauf, Trustee

State of FLORIDA
County of MANATEE

Before me the undersigned authority this 16 day of January, 2009, personally appeared DAVID H. BALDAUF as Trustee of the Benderson 85-1 Trust, on behalf of said Trust. He is personally known to me or has produced _____ as identification.

_____
Print Name: _____
My Commission Expires: _____

ALICIA H. GAYTON
MY COMMISSION #DD645455
EXPIRES: MAR 31, 2011
Bonded through 1st State Insurance

LEGAL DESCRIPTION
EXHIBIT "A"

THE SOUTH 60 FEET OF THE EASTERLY 60 FEET OF SECTION 9; AND THE SOUTHERLY 60 FEET OF THE SOUTHWEST QUARTER (SW ¼) OF SECTION 10; AND THE SOUTHEAST QUARTER (SE ¼) OF SECTION 10 AND THE SOUTH HALF (S ½) OF SECTION 11, LESS THAT PART OF SECTION 11 LYING SOUTH AND EAST OF THE CENTERLINE OF TELEGRAPH CREEK, TOWNSHIP 43 SOUTH, RANGE 26 EAST, LEE COUNTY, FLORIDA AND

THE FOLLOWING DESCRIBED PARCEL: FROM THE NORTHEAST (NE) CORNER OF SECTION 14, TOWNSHIP 43 SOUTH, RANGE 26 EAST, RUN N 88°41'50" W 1,327.53 FEET ALONG THE NORTH LINE OF SAID SECTION TO A CONCRETE MONUMENT AT THE ¼ ¼ CORNER AND THE POINT OF BEGINNING. THENCE S 1°11'52" W 2,657.82 FEET ALONG THE EAST LINE OF THE WEST ½ OF THE NE ¼; THENCE N 88°41'22" W 1,329.39 FEET ALONG THE SOUTH LINE OF THE NE ¼ TO THE CENTER OF SECTION 14; THENCE S 1°02'32" W 1,332.17 FEET TO THE SOUTH LINE OF THE N ½ OF THE SW ¼; THENCE N 88°37'22" W 664.17 FEET TO THE SW CORNER OF THE E ½ OF THE NE ¼ OF THE SW ¼; THENCE N 1°01'06" E 1,331.23 FEET ALONG THE EAST LINE OF THE W ½ OF THE E ½ OF THE SW ¼; THENCE N 1°15'29" E 664.53 FEET ALONG THE EAST LINE OF THE WEST ½ OF THE EAST ½ OF THE NORTHWEST ¼; THENCE S 88°41'29" E 495 FEET; THENCE N 1°15'29" E A DISTANCE OF 1,060 FEET, MORE OR LESS, ALONG A LINE 495 FEET EAST OF AND PARALLEL TO THE EAST LINE OF THE WEST ½ OF THE EAST ½ OF THE NORTHWEST ¼ TO ITS INTERSECTION WITH THE CENTER LINE OF TELEGRAPH CREEK; THENCE NORTHEASTERLY ALONG THE CENTER LINE OF TELEGRAPH CREEK 1,300 FEET, MORE OR LESS, TO ITS INTERSECTION WITH THE NORTH LINE OF SECTION 14, TOWNSHIP 43 SOUTH, RANGE 26 EAST; THENCE S 88°41'50" E 650 FEET, MORE OR LESS, TO THE POINT OF BEGINNING, AND

A TRIANGULAR PARCEL NW OF TELEGRAPH CREEK: BEGIN AT A POINT ON THE NORTH LINE OF SECTION 14, TOWNSHIP 43 SOUTH, RANGE 26 EAST, 168.76 FEET WESTERLY OF THE NORTH ¼ CORNER OF SAID SECTION; THENCE RUN S 1°15'29" W 950 FEET, MORE OR LESS, ALONG A LINE 495 FEET EAST AND PARALLEL TO THE EAST LINE OF THE WEST HALF OF THE EAST HALF OF THE NORTHWEST QUARTER TO ITS INTERSECTION WITH THE CENTERLINE OF TELEGRAPH CREEK; THENCE RUN NORTHEASTERLY ALONG THE CENTERLINE OF SAID CREEK 1,300 FEET, MORE OR LESS, TO ITS INTERSECTION WITH THE NORTH LINE OF SAID SECTION 14; THENCE N 88°41'50" W 850 FEET, MORE OR LESS, ALONG THE NORTH LINE OF SAID SECTION TO THE POINT OF BEGINNING.

SUBJECT TO: COUNTY ROAD RIGHT-OF-WAY ALONG THE SOUTHERLY LINE OF SAID PARCEL.

Appendix E: Partnership Agreement with FDOF

FDACS CONTRACT #

012320

Partnership Agreement between
Lee County and State of Florida
Department of Agriculture and Consumer Services
Division of Forestry

This Partnership Agreement is made and entered into this _____ day of _____, 2007, between Lee County, a political subdivision and Charter County of the State of Florida, hereinafter referred to as the COUNTY, and the State of Florida Department of Agriculture and Consumer Services, Division of Forestry, hereinafter referred to as the DOF.

WITNESSETH

WHEREAS, certain lands are owned by the COUNTY and managed through the COUNTY's Department of Parks and Recreation through the Conservation 20/20 program (C20/20); and

WHEREAS, certain lands acquired through C20/20 were acquired using funds provided through Florida Forever and grant partnerships with Florida Communities Trust (FCT); and

WHEREAS, these lands acquired through the COUNTY's C20/20 program are to be utilized for conservation and stewardship of the natural resources, outdoor nature based recreation, environmental education and related public purposes; and

WHEREAS, in the land stewardship plan for these lands, provisions are made to provide for maintenance of the sites in a natural state and/or to restore sites to enhance natural resource values; and

WHEREAS, several of these preserves require restoration activities to include thinning of slash pine trees and prescribed burning to improve the quality of wildlife habitat and return these communities to historic conditions; and

WHEREAS, the DOF has the expertise required to perform the services identified under this Agreement and desires to assist the COUNTY in administering logging activities at selected properties for restoration purposes.

NOW, THEREFORE, the parties hereto, for and in consideration of the mutual covenants and agreements contained herein agree as follows:

1. The DOF shall plan, administer, and supervise the harvest of timber on COUNTY lands in accordance with ATTACHMENT A, Scope of Services, attached hereto and made a part hereof.

2. The DOF shall receive revenues from all timber sales it administers on behalf of the COUNTY pursuant to this Agreement. DOF will be paid the greater of: (a) ten percent (10%) of the total sales revenue or (b) the actual cost of sale preparation plus 3% of the total sales revenue for an administrative fee. Funds retained by DOF for sale preparation shall cover the cost of field consultation with COUNTY staff, field reconnaissance to

prepare the sale, necessary timber cruising or marking, purchase of expendable field supplies, and preparation of the sale package. The sale preparation and administrative fee retained by the DOF shall cover the cost of solicitation and receipt of bids, execution of contract, and supervision of the sale while in progress. Once each sale is completed, DOF will subsequently remit to the COUNTY the total sales revenue accrued from these sales, minus DOF's fee for sale preparation and administration. If DOF hires a private contractor to perform any of the above listed activities, DOF will pay the contractor's fee from their share of the revenues.

3. The COUNTY shall complete any road repairs necessary to access and remove timber from the sites above and beyond those road repairs the timber harvest contractor would be responsible for under the timber harvest contract.

4. The COUNTY shall also assist DOF with field administration of timber sales. Such assistance will be mutually agreed upon in advance and include activities such as site visits and truck tallies.

5. It is understood by both parties that the COUNTY lands shall be managed in a manner consistent with the approved County land stewardship plan.

6. The COUNTY's Project Manager is:

Cathy Olson
Conservation 20/20 Senior Supervisor
Department of Parks and Recreation
3410 Palm Beach Boulevard
Fort Myers, Florida 33916
telephone (239) 461-7455

The DOF's Project Manager is:
Butch Mallett
Senior Forester
Florida Division of Forestry
Other State Lands
15019 Broad Street
Brooksville, FL 34601-4201
telephone (352) 797-5755

The DOF's local contact is:
Michael Weston
CFA Senior Forester
Florida Division of Forestry
10941 Palm Beach Boulevard
Fort Myers, Florida
telephone (239) 690-3500 Ext. 118

All project matters shall be directed to the Project Managers for appropriate action or disposition.

7. The COUNTY represents that it has the right to agree to resource management activities necessary to facilitate the sale of forest products on COUNTY lands by the DOF.

8. The COUNTY, or its duly authorized agents, shall have the right to inspect the COUNTY timber project areas and the works and operations thereon of the DOF in any matter pertaining to this Agreement.

9. This Agreement and any rights and privileges contained herein are for the sole use of the DOF and shall not be assigned or transferred to another party without prior written approval of the COUNTY. The DOF shall have the right to enter and occupy COUNTY lands for the purposes necessary to meet its designated responsibilities, including protection of those lands. The DOF's agents and employees shall take all reasonable measures to provide security against damage, degradation and unauthorized uses of the COUNTY lands and natural resources.

10. The DOF shall submit a report at a minimum of twice every calendar year to the COUNTY on items related to its timber management activities on the COUNTY lands during the year.

11. The COUNTY and DOF agree that this Agreement shall confer upon the DOF the right to implement silvicultural treatments necessary to facilitate the sale of timber on the COUNTY lands. The DOF shall investigate any and all claims of injury or damage either for or against the COUNTY or the DOF pertaining to forest resource management activities conducted on the COUNTY lands by the DOF and shall notify the COUNTY regarding the legal action deemed appropriate to remedy such damages or claims.

12. The COUNTY and DOF hereto agree that each party shall be solely responsible for the negligent or wrongful acts of its employees and agents during the course of normal working conditions. However, nothing contained herein shall be construed as an indemnity or constitute a waiver by either party of its sovereign immunity or the provisions of Section

768.28, Florida Statutes, as amended from time to time, or any other law providing limitations on claims.

13. This Agreement shall be effective upon execution by both parties, and shall remain in full force and effect until terminated as provided herein. Either party may terminate this Agreement for cause or convenience by giving sixty (60) days notice in writing to the other party of its intent to do so.

14. Upon such termination invoked by either the DOF or the COUNTY, and upon cessation of timber operations on said COUNTY lands, by the DOF, the DOF agrees to remove any improvements placed or made by the DOF at DOF's sole cost and expense.

15. To the extent required by law, the DOF will be self-insured against, or will secure and maintain during the life of this Agreement, Worker's Compensation Insurance for all of its employees connected with the work of this project. Such self-insurance coverage shall comply fully with the Florida Worker's Compensation law. In case any class of employees engaged in hazardous work under this Agreement is not protected under Worker's Compensation statutes, the DOF shall provide adequate insurance satisfactory to the COUNTY, for the protection of its employees not otherwise protected.

16. The DOF warrants and represents that it is self-funded for liability insurance, appropriate and allowable under Florida law, and that such self-insurance offers protection applicable to the DOF's officers, employees, servants and agents while acting within the scope of their employment with the DOF.

17. This Agreement represents the entire agreement of the parties. Any alterations, variations, changes, modifications, waivers of provisions of this Agreement shall only be valid when they have been reduced to writing, duly signed by each of the parties hereto, and attached to the original of this Agreement, unless otherwise provided herein.

IN WITNESS WHEREOF, the Florida Department of Agriculture and Consumer Services, Division of Forestry, and Lee County Department of Parks and Recreation have caused this Agreement to be duly executed and effective as of the date last written below.

WITNESSES

Christa A. Register

Chandler A. Baker

STATE OF FLORIDA
DEPARTMENT OF AGRICULTURE AND
CONSUMER SERVICES,
CHARLES BRONSON, COMMISSIONER

BY: Mike Gresham
MIKE GRESHAM, DIRECTOR
DIVISION OF ADMINISTRATION

STATE OF FLORIDA
COUNTY OF LEON

The foregoing instrument was acknowledged before me this 13th day of March, 2007, by Mike Gresham, as Director, Division of Administration, Department of Agriculture and Consumer Services, who is personally known to me and who did take an oath.

Karen A. Meyer
Commission # DD346679
Expires October 20, 2008
Bonded Troy Fain - Insurance, Inc 800-385-7019

Karen A. Meyer
Notary Public
My Commission Expires: 10/20/2008

WITNESSES

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LEE COUNTY, FLORIDA
BOARD OF COUNTY COMMISSIONERS

BY: _____
BOB JANES, CHAIR

AS APPROVED BY THE BOARD ON

_____

ATTACHMENT A
Scope of Services

Lee County is desirous of managing timber on selected Conservation 20/20 lands for the purposes of maintenance or restoration. These lands include flatwoods ecosystems, as well as disturbed community types. The goal of restoration is to return these communities to historic conditions, and to improve the quality of wildlife habitat.

Within the restoration areas, slash pine trees will be thinned to a density appropriate for the management goals of the timber unit. Typically, healthy, dominant slash pine trees will remain as a seed source for pine regeneration.

The DOF agrees to perform the tasks stated below.

The identified tasks are as follows:

1. Provide assistance to COUNTY staff in marking the timber that is to be removed for restoration purposes. In natural stands, the leave trees shall consist of healthy, mature slash pine. Where surrounding stands do not provide large den trees,, leave the old flat-topped slash pines, large overtopped slash, (>10 in. d.b.h.) and any cat-faced pines within the sale areas. Pines will be selectively removed to allow enough room in between clusters of trees for future roller chopping or other brush reduction activities. Timber harvesting, combined with brush reduction and a prescribed burning program, will be the quickest way to increase biodiversity and return these stands to a more historical condition.

2. Any environmentally sensitive areas, such as wetlands, that are encountered while marking the timber must be recorded and documented. Do not mark any timber in such areas that could potentially damage or destroy the area. Areas of concern include, but are not limited to, seasonal ponds, cypress strands, wet prairies, archaeological sites, cultural sites, and threatened or endangered plant or animal habitations (e.g. inactive or active bald eagle nest trees, fox squirrel nests, gopher tortoise burrows). A 30-50 foot buffer zone may be marked around these sensitive wetland habitats and will be marked around cultural, archaeological and listed species habitats that the equipment must stay out of. In addition, tree thinning activities will only take place during the dry season. In areas where saw palmetto is the dominant ground cover, timber harvesting skid trails will be scattered over the general harvest area to disperse the impacts to a broader area of saw palmetto. Slash piles will be spread in piles no higher than 18" or near remaining trees. No slash will be left on roads or trails after work is completed. Remaining tree stumps shall be no higher than 8". All timber sales operations must be conducted in accordance with the most current Florida Silviculture Best Management Practices Manual.

3. The DOF agrees at a minimum to assist and administer the needed timber sales within the COUNTY during the term of this Agreement. These sales would include reducing merchantable pine basal area.

4. The DOF will prepare timber sale packages, mail the packages to prospective bidders, and be responsible for overseeing the harvesting operations. Timber revenues will be receipted by the DOF and revenues (less the 10% administrative fee) returned to the COUNTY at the end of each sale. In the event the actual cost of the sale preparation plus 3% of the total sales revenue exceeds 10% of timber sale revenues, the County will pay the actual cost of the sale preparation plus 3% of the total sales revenue.

5. The DOF will obtain COUNTY approval prior to initiating any timber sale. This will include COUNTY approval of the entire timber sale bid package, including the timber sale agreement, prior to mailing to prospective bidders.

6. The DOF agrees that all applicable Federal, State and COUNTY laws and regulations will be adhered to. The County regulations include but are not limited to:

    a. Management of the lands shall be for conservation of the natural resources and to provide environmental education and passive recreation opportunities. Damage to non-harvested trees shall be limited as much as possible. Root systems of leave trees are to be impacted as little as possible. Only double marked trees may be removed, leaving the lowest mark on the tree for verification, unless for a particular sale, a decision is made to double mark the leave trees.
    b. Logging slash will be spread around the site. All ramps and loading decks shall be re-graded to natural soil level.
    c. No off-road motorized vehicles are allowed, except for authorized land management activities.
    d. No hunting is allowed.
    e. No collecting of plants or animals (dead or alive), for any purposes is allowed, except by special permit or agreement issued by the Lee County Parks and Recreation staff.
    f. No pets are allowed.
    g. No illegal activities are allowed.
    h. No trash from the contractor or DOF personnel shall be left on site at the end of each work day.
    i. A hydraulic spill containment kit shall be on-site during all harvesting work and be used for all hydraulic fluid spills.

Healthy flatwoods communities are characterized by open, uneven-aged pine stands that allow a considerable amount of sunlight to reach the forest floor. Ground cover consists of a diverse mixture of grasses, herbaceous plants and dried pine needles that foster frequent lightning season fires. Saw palmettos are scattered and low growing. Unfortunately, some of the pine flatwoods stands in Lee County Preserves have become overgrown due to years of fire suppression and previous land use practices. Some of the stands are very dense and filled with thick, skinny pines with few other plants, beyond some weedy and exotic species (Figure A). Other flatwoods stands have larger pines, surrounded by extremely high; thick palmetto bushes (Figure B).

Ecological benefits of thinning pine trees

- Many wildlife species benefit from healthy flatwoods for the diversity of plants, and open midstory to watch for predators. This includes listed species such as gopher tortoises, eastern indigo snakes, Sherman's and Big Cypress fox squirrels and red-cockaded woodpeckers.
- Remove weak and diseased trees before the health problem spreads throughout the stand.
- Create openings which allow new seedlings to get established to ensure an uneven aged stand of trees. Slash pines typically only live 100 years, and so it is important to have young trees growing up to replace the old ones.
- Control the midstory growth of palmettos and other shrubs to allow young pines to grow.
- Reduce heavy fuel loads for prescribed burning and to prevent catastrophic wildfires.
- Provide room for fuel reduction through mowing, roller chopping, etc where prescribed burning is not feasible (small urban sites).
- Diminish the possibility of crown fire, which have a high risk of spotting over into adjacent areas, during a wildfire or prescribed fire. Crown fires also typically kill the pine trees, leaving an enormous amount of potentially dangerous snags (Figure C).
- Promote rare plant species such as beautiful paw paw and Simpson's zephyrlily that only grow in open flatwoods with periodic fires.
- Prevent significant forest die offs from pine beetles and other insects that attack trees that are stressed, such as those growing in dense pine stands.
- Allow staff to reduce fuels in urban-interface areas where the risk of high-intensity wildfires that could endanger people and property.
- Improve the habitat for future Lee County gopher tortoise relocation needs.

In each stand, Land Stewardship staff has calculated the Basal Area (BA). This measurement is calculated by using a prism that measures both the number of trees and their diameter, per acre, in a stand. Ideal flatwoods conditions are between 40-60 square feet of BA, which provides enough needles to carry a fire and enough sunlight for native grasses and other plants to thrive. Then with the assistance of Division of

Forestry staff, trees are carefully selected to achieve the goal of creating a healthy pine flatwoods community (Figures D & E).

Figure A: Pop Ash Creek Preserve

Figure B: Gator Hole Preserve

Figure C: Snags from a wildfire in an overly thick pine forest (not in Lee County)

Figure D: Gator Hole Preserve

Appendix F: Expended and Projected Costs and Funding Sources

Appendix F - Expended and Projected Costs and Funding Sources

EXPENDED $

Structures and Improvements

Item	Funding Source	Costs
Septic tank removal	C20/20	$700
total		**$700**

Resource Enhancement and Protection

Item	Funding Source	Costs
Exotic plant control	C20/20 (in-house)	$2,646
Prescribed fire regime	C20/20 (in-house)	$8,000
Fireline installation	C20/20	$25,664
	FWC grant	$3,000
Mechanical tree and brush reduction	C20/20 (in-house)	$14,526
	FWC grant	$7,724
total		**$61,560**

Overall Protection

Item	Funding Source	Costs
Install new gates	C20/20	$100
Boundary signs	C20/20	$576
Trash removal	C20/20 (in-house)	$144
total		**$820**

TOTAL COST TO DATE	**$63,080**

PROJECTED $

Structures & Improvements

Item	Possible Funding Sources	Costs
Automatic gates	C20/20, Office of Greenways	$10,000
Permitting trailhead and culverts		$20,000
Construction of trailheads and walkthroughs		$18,000
Renovation of storage building		$14,500
Information kiosk		$2,000
Trail markers		$2,500
Entrance & trail signs		$850
Closed trail signs		$500

Total Cost Estimate **$68,350**

Resource Enhancement and Protection

Item	Possible Funding Sources	Costs
Initial invasive exotic plant removal of natural areas	C20/20, IPM,USFWS	$300,000
Wash out \ Erosion	SFWMD, C20/20, LCPA, LDOT, future mitigation	$10,000
Pasture restoration		$994,916
Hydrological restoration		$15,000
Mechanical brush and tree reductio	C20/20	$95,400
Trash removal		$1,550
Interior fence removal		$3,500
Exotic animal removal		$4,200
Additional fireline installation		$37,540

Total Cost Estimate **$1,462,106**

Overall Protection

Item	Possible Funding Sources	Costs
Fence repairs	C20/20	$100
Fence installation		$49,000

Total Cost Estimate **$49,100**

Grand Total Cost Estimate **$1,579,556**

Site Management and Maintenance

Item	Possible Funding Sources	Costs
Exotic plant control	C20/20, DEP-IPM, pine thinning	$63,750
Prescribed fire regime (annually)	C20/20, FDOF	$20,000
Annual trail maintenance	C20/20	$1,728
Fireline maintenance		$1,728
Trail maintenance		$1,700
Fence repairs		$100
Storage building maintenance		$200

Yearly Maintenance Estimate **$89,206**